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OVERHEAD EXPENSES.

This editorial on "Overhead Expenses" has a three-fold incentive and a two-fold mission. The first incentive was furnished by some of the essays presented at plumbers' conventions, showing the growing recognition of the need of education among plumbers generally on this subject. The second was provided by personal visits and conversations with different members of the craft. The third incentive, and the most forcible, was furnished by a direct appeal from two master plumbers asking for an editorial on this subject.

Its mission is two-fold. First, it wishes to present to the careful consideration of plumbers, who are deficient in bookkeeping practice, a definite stimulus to careful figuring and ensuing profits; second, it is designed to place in the hands of plumbers, who are alive to the importance of this subject, an effective means of educating their less advanced brethren in the field.

We can best get to the heart of the subject by asking a series of questions, the replies to which in the affirmative or negative will immediately enable the reader to ascertain his strength or his weakness in regard to overhead expenses. Kindly answer Yes or No.

Do you pay yourself a salary?

If you own your store, do you collect its rent from your business?

If you do, on what basis do you estimate its rental?. Comparison by adjoining rentals?. Or percentage of value?

Does every article you sell pay you its proportion of interest on your investments?

Does every repair job you undertake help to carry your insurance on stock, fixtures, teams, tools and other operative equipment?

Does every contract you obtain include in its price its share of the bills you have to meet for water, gas, electric light, and heat?

Did the prices you last quoted on a lavatory fixture bear any relation to your incidental expenses?

The business controlled by a man who can answer "Yes" to all the above questions is in a healthy condition. The enterprises under the guidance of one

whose answer is "No," even though he is making money at the present time, is in an unhealthy condition, and is courting disaster in a future time of business stress.

To the man who has been content to put his trust in the job of the moment, relying like the famous "Micawber" (one of Dickens' universal types) that in the future something would "always turn up," we would call attention to the following paragraph:

Why did you go into business for yourself? For your health? For the glory of it? Or because you believed that by so doing, you could make more money for yourself than you did when you worked for others?

Nearly every man-jack will answer the last question in the affirmative, but the results would indicate that either of the first two objects was apparently the one in view in many cases for the profits shown are 0^2. Ask the zeroites why their alleged aim yields such poor records of markmanship and they will name a dozen adverse "wind-currents" as the cause. To continue the simile, they said their powder was of good quality and dry, the gun properly cleaned, and the trigger-action perfect. They, however, did not make sufficient allowance for recoil, elevation and wind.

In like manner, a business man, with thorough knowledge of costs of material and labor, will miss his aim at profit, if he fails to adequately gage and reckon in his overhead expenses. This name must have been given, because so many men keep their eyes on the ground in business matters and pay no attention to dangers from above.

Many so-called business men believe in the existence of a fairy Profit, who stands over the till or cash-drawer, and whose magic wand will supply, as needed, the funds to meet the emergencies of rent, taxes, interest, light, heat, advertising and incidentals. At critical moments however, they find to their surprise that the form of Profit has been assumed by the evil genie Debt, and the visionary greenbacks are transformed into unpaid bills. Then they go back to the journeyman's kit and tell of the "has-been" days and the "bad luck" that followed them or the unfair competition that put them out of business.

It does not require a technical education or an accountant's knowledge to understand that the man who runs the business is entitled to his salary and must take it into consideration in all his figuring. If the best man in the shop earns $25 a week, surely the master of the business should command a salary of $30. He bears all the responsibility of the business, superintends its selling, pays its debts, replenishes its stock, and has to provide the money weekly for payment of his employees. If his figuring and his sales do not include the payment of his personal salary as a fixed expense, what is he in business for? The general answer given is that his salary will be taken care of by the profits. Hence, if there are no profits he gets no salary. To a man so ignorant of his obligations to himself and his family, we would give the following advice—reform your method of figuring or go to work for somebody else who will see that you are provided for by a weekly salary. The profits will be none the less if you draw your salary weekly.

Some may own the building in which they conduct their business and, because they own it, think they can figure cheaper than a man who pays rent. This is another case of glaring self-deception. If a man never worked at all, the property he owned would bring him in a rental. Why, therefore, should his business not pay him rentals for its housing in the same manner? The best method of estimating what the business should pay for the use of the property is to charge one per cent of its yearly selling value. The labor and materials are considered by everybody in estimating the charge which should be made for the article, a repair job or a contract. They are considered because they have to be. Overhead expenses are neglected by many because they do not seem to apply immediately to the job under consideration. Such neglect can only have one name—business suicide. The load of overhead expenses should be borne by every department of business operation and by every article of supply, from an elbow to a bathtub, and from a gas mantle to a chandelier.

Light, heat, business taxes, stationery, office furniture, tools, insurance, advertising, subscriptions to trade journals, associational dues, office expenses, office salaries—all these enter into the overhead-expense account. They can be estimated approximately by last year's records. If you have not yet joined an association, do so now, and add your association dues to your overhead-expense estimate, and distribute its proportion of the load of such expenses in your business figuring.

Plumbers are held in the eyes of the public as extortionate in their charges. That this opinion is false is clearly shown by the fact that in Dun and Bradstreet, there cannot be found 25 plumbers throughout the country who are rated in the wealthy class. It is doubtful whether any of the 25 made their money solely in the plumbing business. Most of them have made it by side lines such as real estate. On the other hand, there are hundreds of cases on record of good men who have gone to the wall in the plumbing business, whose failure can be attributed directly to their neglect in considering overhead expenses.

Those who have failed to make money in the plumbing business may find some consolation in

the music hall ditty, "Better be a Has-Been than a Never-Was-at-All," but there is more dignity and profit in being an "isser" than a "has-been" or a "never-wasser." Reminiscence tightens its belt often and furnishes poor employment for the gastric juices. The "isser" gets three meals a day and occasionally treats Dame Fortune to a box at the opera.

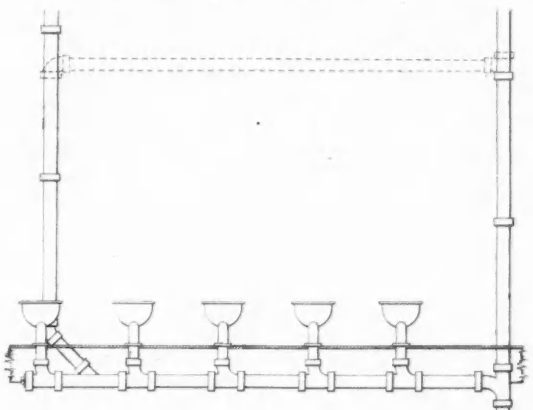
We invite contributions from our readers on their methods of dealing with overhead expenses and trust that this editorial may fulfil its dual mission by inciting the neglectful to better practice and the careful to their responsibility of educating their less fortunate brethren in the business.

CLOSET-BEND VENTILATION.*

By W. H. Jennish, Waterloo, Ia.

In my opinion there is a great amount of money spent each year for certain soil-pipe ventilation, which could be saved for the property owner, and in no way jeopardize the work, and this is mostly on closet-bend ventilation.

I remember years ago when every front wash-out closet had its vent-horn, and we have passed along the lines of evolution from the old brass connection, then rubber connections, next slip joints and lastly without any vent-horn whatever. We then started bend ventilation, next improved closets, and then after a time we dispensed with



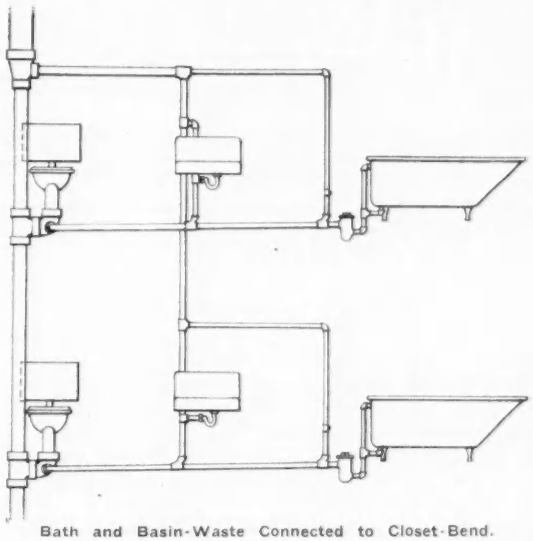
Unnecessary Closet Ventilation Avoided.

a bend vent if it was a top fixture on a stack and only vented the lower ones.

For a number of years some of us have dispensed with all bend venting in residence work and business blocks if less than three stories in height, except long branch runs. We still run waste pipe lines into closet bends, and this method gives a certain amount of ventilation to the bend.

I cannot make myself believe that the idea of connecting waste lines into the bends is entirely wrong, as contended by some authorities, and the so-called objections are not too well taken. Personal observations and much inquiry among the plumbers in our section fail to show the weakness claimed for this method of waste connection. On inquiry among authorities on plumbing the claim is made that a waste-line wiped into a closet bend will break out around the solder line from the expansion and contraction of the waste-line. This I am not ready to concede, as all our work has been done that way for years, and if entirely wrong I would certainly have found some broken connections, none of which have come under my observations.

The method of placing a Y below the sanitary T to



Bath and Basin-Waste Connected to Closet-Bend.

receive a waste-line from the bath-room fixtures, and only connect the closet-bend with a sanitary T and then vent the bend, is a long way around to accomplish a desired result that the simpler method will do and do just as well.

I have examined first floor closets set under these conditions in buildings where the first floor was vacant for weeks and the upper floor in constant use, and found the trap-seal still unbroken and practically the only loss was by evaporation. With these facts I failed to see the wisdom of the added vent-line to the closet-bend.

Where we use a range of closets we run our lines with either sanitary T's or Y's and continue the full size of the line of pipe from the point between the last two closets out through the roof or back into the main stack and omit all separate vent-lines to each separate closet-bend. I have taken closets set in this way and flushed them separately, in threes, fours, fives, or all but the first one, simultaneously, and have yet to find a single seal broken from the test.

Theoretically I may be wrong, but practically I think I am right in my contention that the only good of a vent to a bend is to prevent siphonage, and if this can be prevented without the vent it is then a waste of money to put it there.

I do not wish to be understood as advocating the long runs from a stack and set a closet on a dead end. If a closet is more than three and one-half feet from the main stack and no waste line is run into the branch, I would require a vent to be placed in the bend or close to it.

I could cite other places, such as drum-trap ventilation under certain conditions, under which the vent-pipe does not add anything whatever. But I started out to confine myself to the closet-bend ventilation and for that reason will not take up anything along the other lines. The job that looks best to me is the job that has the smallest amount of pipe and fittings to do its work properly. This is one reason why I favor circuit venting and short runs.

*Read at the fifth annual meeting of the American Society of Inspectors of Plumbing and Sanitary Engineers, held at Trenton, N. J., Jan. 20-22, 1910.

In Early Days—XXVIII

By Herbert S. Renton.

BRASS WORK AND STEAM SUPPLIES IN WHEELBARROW LINES.

I went down to Honolulu in a sailing vessel from Frisco in 1879, with an outfit of gasoline lamps and torches, expecting the usual pioneer extra profit introducing a new article, only to find a prohibitive law against gasoline, and the fine samples which I already had brought five thousand miles, all the way from New York, were valueless. But it was only a side line, and I was comforted by an order from Alexander Young, superintendent of the Honolulu Iron Works, for steam cocks and valves, with the assurance that the entire brass trade of the Hawaiian Islands was mine if I would take care of it.

It was the era of new sugar mills, and the Honolulu Iron Works controlled the business. Steam cocks of the 2-in. size sold in Honolulu at that time for $20 each, net. Think of it, ye makers of competition goods! Everything else in proportion. Mr. Young was a life-long friend of my uncle, James Renton, who was a sugar planter on the island of Hawaii, 200 miles from Honolulu, and he said to me: "If you will send me what we need here, the brass goods and iron-pipe trade of the islands belongs to you." A sugar mill cost from $80,000 to a quarter of a million. Hackfeld & Co., a German house, and Brewer & Co. imported some of the machinery and so did Castle & Cooke, but the bulk of the work was done by Mr. Young's concern and all of the jobbing, of course, there being no other iron-works nearer than San Francisco.

Honolulu is the most lively city in the world, because of the superb flowering plants and trees which bloom everywhere. A sea of foliage breaks over the little town and every good view of it is lost in the inundation. My outlook for business was as lovely as the town almost, and after a journey to Maui and the other islands, and a horseback ride of 300 miles around Hawaii, visiting Mauna Loa and Kiluea, the biggest active volcano in the world, I sailed from this wonderland for the Golden Gate and found my way back to Manhattan.

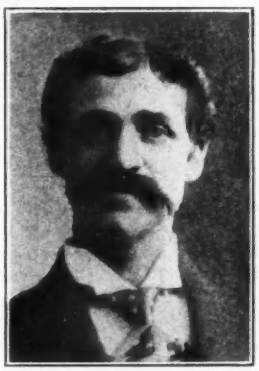
McNab & Harlin were the far-sighted pioneers in the foreign brass trade, and while other makers of steam and water goods were asleep they supplied the Cubans, South and Central Americans, Hawaiians et al., with valves and fittings. Mr. Young told me that he bought from McNab & Harlin. I was to fill his order through Hunter & Keller. For 14 years my father, Fergus A. Renton, had made all the brass castings used by Hunter & Keller, 144 Centre St., New York, which was the leading firm in the steam-goods line in the United States. No one ever hears the name spoken now—but from 1860 to 1880 they were in the van.

I remember about 1865, as a boy, my job was to go along with a man and provide a runway over the gutters with a piece of board for the wheelbarrow full of castings which he jacked around from 141 Elm St. to 144 Centre St., about four blocks. Sometimes the wheelbarrow would hit the board at a wrong angle and describe a parabolic curve, while the castings flew off at a tangent, the man performing various evolutions trying to regain control of his one-wheel wagon and, manlike, blaming it on the boy. The boy usually said: "It wasn't my fault." Then the spilled castings would be gathered up and the procession proceed to the next gutter! Those were primitive days!

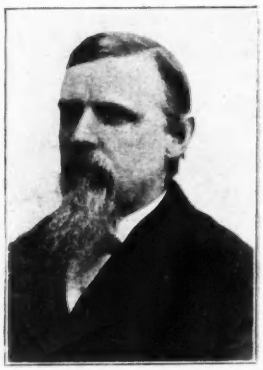
For more than twenty years, without a break, Hunter & Keller's finishing shop was furnished with all of its brass castings from our foundry, but the wheelbarrow was discarded before we moved to Mangin St., near the East River, a mile away from Elm St., in 1867.

In 1869 we had a branch in Greenpoint, Brooklyn, where we made the first Nathan & Dreyfus injectors for locomotives. The sale of the injectors was astonishing. The foundry could take care of the orders, but the little finishing shop could not, and the contract went to Eaton, Cole & Burnham, at Bridgeport, Conn., where an uncle, John Renton, had charge of the casting department. Presently there was trouble. Tons of castings were returned from the finishing shop to the foundry because they were porous. In despair they sent for my father.

Mr. Burnham, years afterward, in 1892, related the incident to me thus: "Your father came up here and the first thing he said was: 'Have you got any old copper?'



Michael F. Daly.



The Late Fergus A. Renton.

No one had ever thought of that, as we always used new copper. We got some old copper—he made a mixture and asked 'When is the next train for New York?' 'Why,' we said, 'are you not going to wait and see the castings.' 'No, you are all right now, only use old copper.' Well," continued Mr. Burnham, "he went back on the next train and charged us $500, which we paid as cheerfully as we ever paid anything in our lives, because we would have lost the contract and it was a very valuable one."

The injector business grew to such proportions that Nathan & Dreyfus built a foundry and finishing shop in East 96th St., New York, just to make their own work, and my uncle, John, was in charge of the casting end of it until shortly before his death. The concern became the Nathan Mfg. Co. and one of the most prosperous in the United States. In strange contrast to Hunter & Keller!

Mr. Keller was a hustler and his one great idea was to have a big Chicago house. He spent so much money in establishing a plant that, with the defection of John Simmons, the firm failed. With more money Keller would have won out; the tremendous success of the Crane Co., which came up from small beginnings, and others, proves it. Without a doubt Chicago today is coming to be the greatest business centre in the Union. Keller knew what

a field he had, but alas, like many another, his strength was not equal to his task, and his partner was timid. Mr. Hunter was a tall man, wore a beard of sandy hue, and was one of the most pleasant, gentle, and best liked men in New York. "His life was gentle and the elements so mixed in him that Nature might stand up and say to all the world 'This was a man.'" He was a strict Lutheran and was considered one of the best business men in the city. He opposed Keller's Chicago operations because their capital was not sufficient to carry two concerns a thousand miles apart. The firm of Hunter, Keller & Co. was continued after Mr. Hunter's death by his widow and Mr. Keller. John Simmons had charge of the sales department and wanted an interest in the firm. Had Mr. Keller given him what he wanted it is likely that there would have been no failure, even allowing for the losses in Chicago. Mr. Simmons started for himself, took away about all of the old firm's cash trade, leaving them only the stickers; then came the crash.

Hunter, Keller & Co. resumed, struggled along for a time and failed again. Mr. Keller died and his two sons continued the business until it finally petered out.

I knew John Simmons as well as I knew anyone in the trade. He was a Presbyterian and a worker in the Church of the Sea and Land at Henry and Market Sts., in early days, a region since transformed from an old fashioned American neighborhood to a crowded tenement of Jewish immigrants from Russia.

Mr. Simmons's church had an excursion every summer and I sailed with his Market St. band as regularly as the season came round, because I had a free ticket. John Simmons was a remarkable man, of portly figure, and fine looking. He was like an April day—all sunshine one minute and then black clouds for storm—returning again to the glow and warmth of summer. But the man who did not like John Simmons I have never seen. I had almost no business with him after he left Hunter, Keller & Co., but I had a most delightful chat in his private office only a short time before he died. He talked of old times—of my father, of the changes in the trade; of travel; of many things, and business was forgotten. I can never forget how genial he was that day. He was agent for Jarecki of Erie, Pa., and I reminded him of the offer Mr. Jarecki had made to my father years before—asking him to give up his business in Brooklyn and go to Erie to take charge of his large works there.

When they told me that John Simmons was dead I had a deep sense of personal loss. The great company now managed by his sons is one of the institutions of the metropolis.

Mr. Harlin of McNab & Harlin offered to make one of my father's patents on a royalty in 1882, but as in the case of Jarecki they did not come to terms.

Pancoast & Rogers, whose large business was transacted in tiny Platt St., sent pipe to the Hawaiian market, but McNab & Harlin did not lose the brass trade for Hunter & Keller utterly neglected Mr. Young's orders because, they said, it was "so far away," and all my rosy dreams of profit in the Pacific faded like the former dreams of gasoline returns. I have had lots of "fade-away" experiences, but under all conditions have tried, like Uncle Si, to "keep a goin'."

There is an old-time hand now with Wm. H. Hussey & Son of Thirty-fifth St., New York, who, as a boy, worked for Worthington & Co., at the Hydraulic Works, Brooklyn, and has pitched in his time at least 4,000,899 fittings. He had charge of the iron-pipe department at Henry McShane's and Thos. G. Knight's in Brooklyn, for many years, and he is known as "Hydraulic Mike, the King of the Fittin's." In the city directory his name is given as: Michael F. Daly. I frequently chat with Mike, who "remembers away back," of the days when there were very few fittings made for either cast or wrought-pipe. The early gas-fitter, for instance, always carried a forge and forged his tees from two short pieces of pipe, and bent his elbows from gas pipe as well.

Thos. Cochrane, Jr., of the New York Master Plumbers' Association, recently showed me a ¾-in. tee made by boring a hole in a bit of pipe and forging in another piece. This example was a good job and about fifty years old. Not one fitter in a hundred could make a tee like it today.

Two of the noted steam-fitting firms, when I was a boy in New York, were Cameron & Geoghegan and

The Late John Simmons.

Blake & Higgins, both on Centre St. Stephen J. Geoghegan was a little man and a great hustler. Cameron retired from the concern and it finally became Gillis & Geoghegan, carrying on an immense business for years.

When travel was something that very few in the trade indulged in, Mr. Gillis, who was more like a banker in appearance than a steam-fitter, traveled round the world and wrote a book on his experiences. The accompanying picture is a reproduction of the frontispiece of that book. The last time I saw him he handed me a copy. There never was a courtlier gentleman than Charles J. Gillis.

Two of the "steam" men who graduated from Hunter & Keller's were John McNeal and W. A. Ransom. They ran, in their practical work, many thousands of miles of pipe of the kind they had sold when with the old jobbers and manufacturers.

Jenkins Bros., with their soft-seat valves, made money

from the start. The patent was issued to Nathaniel Jenkins of Boston, dated Oct. 15, 1867, for a packing for joints, valves, etc. The formula given was as follows: "Composed of caoutchouc, 8; mica, 15; shellac, 4; steatite, 3; sulphur, 1; wood charcoal, 1; pulverized, mixed and vulcanized." The claims were: "1. The employment of pulverized mica intimately mixed before vulcanizing with the constituents of vulcanized rubber as and for the purpose described. 2. The employment of pulverized wood charcoal, intimately mixed before vulcanizing with the constituents of vulcanized rubber as and for the purpose described."

The Late Chas. J. Gillis.

Eaton, Cole & Burnham made all the Jenkins valves for Jenkins Bros. for years, and sold their own valves with a Jenkins soft seat besides.

It was believed that valves bought directly from Jenkins Bros. were better than Eaton, Cole & Burnham's with Jenkins' own packing. But whether they were or not, as Lord Dundreary says: "No fellow could find out." Only a few knew that the "only original valves" were made in the Bridgeport shop along with others.

Two years after Mr. Gillis toured the globe, I made a trip of 50,000 miles, zigzagging but going clear around the world, and when I reached Honolulu from Australia I found the Nott Brothers still in the plumbing business as they were during my first visit in 1879. For many years one of the brothers, John Nott, was *the* plumber of Honolulu. There are several fine firms there now—and the Island capital has always been right up to date.

The father of the Nott Brothers kept a little tinsmith shop near our foundry in Brooklyn for ages. He looked younger than the boys, and when I introduced a traveler from Hawaii to the old man 25 years ago the comment was: "Well, you are a wonderful man to be the father of John Nott—I have known him out in Honolulu for 40 years."

Contemporary with Hunter, Keller & Co. I remember Mayor & Lane just around the corner in Walker St. Mayor worked at the lathe. Geo. Lane, who is still a citizen of New York but not in the firm, was office manager and Victor A. Harder was salesman. Mayor, Lane & Co. are now one of the oldest plumbers' supply concerns, but there is no evidence of antiquity when I drop in to talk of old Philadelphia with the manager, Louis F. Merriam.

Mr. Kennedy, of the old Centre St. brass shop of Newkirk & Kennedy, who has been out of the trade for a quarter of a century, calls in to see John A. Murray occasionally at his W. 39th St. supply house.

Newkirk & Kennedy were contemporary with J. Coleman, J. and H. Jones and David Morrison. Another famous character was Thomas Hanson, of Centre St., one of the pioneer pump-makers who made a very superior article.

I remember that William Gee made some of the very early soda-water generators in the old Harlem Freight Depot in Centre St. He was a choleric man and I nearly lost his trade in 1866 by being "sassy" to him.

Another of our customers made fluting machines, and he made so much money that it bothered him. He was always drunk, and when I went to collect his account he would pull bunches of bills from every pocket and roar, "Receipt it!" And he always seemed sorry that he couldn't pay me more. Oh, for such prosperity as we had just after the war—except the drunks!

Then there was Adam Carr, whose place was in Courtlandt St., and afterward in Centre St. He made valves and steam goods and had the worst patterns in the world.

I remember Congressman Felix Campbell of John St. In the early seventies I presented him a bill for 100 ⅜-in. globe valves all $1 each. Mr. Campbell began to joke about the price. "How much does it cost to finish this valve?" I replied: "Twenty-five cents." Yes," said he, "and 25 cents more will pay for the material. Your bill is a dollar. You don't want to make all that money do you?" "Why, yes, all I can get," I answered. It struck Mr. Campbell in the right spot. He laughed heartily and paid in full.

George P. Jacobs, of Brooklyn, first entered the business at Felix Campbell's John St. establishment.

The old Conway Park Theatre, built in Fulton St., Brooklyn, in 1863, by B. T. Benton, the first American wrought-pipe maker, and which contained swimming baths in the basement supplied by salt water piped from the East river, burned down in November, 1908. The property is owned by the Felix Campbell estate.

One of the early brass shops was that of Dinnen Bros., forgotten long ago.

One of the oldest manufacturers of brass work today is George Taylor, who is still making showers, needle-baths and fine grade fixings in the place where he started 40 years ago. He moved away once, but the Brooklyn bridge moved him back again, and the old shop is a landmark in old New York. Nearly half a century ago Mr. Taylor had a shop in Motts' building, and made all of J. L. Motts' fine brass work by contract. He has not made Motts work for 40 years, but the grade of his product is unexcelled in the world. Mr. Taylor learned his trade in England and was a noted brass worker in Brooklyn and New York long before the war. He is a past grand master of the art, and an example of the truth of the adage: "Live right and you will never grow old!"

Another shop, not so ancient, but which is well

equipped and centrally located, is that of Locke & Smith Co., 103 W. 37th St., an adjunct to their supply business. Albert Pearson has charge of both departments and is the best authority in New York on the history of the trade in its commercial as well as mechanical features. Mr. Pearson is conversant with the trade in all its phases. Twenty-seven years ago he and E. B. Wood had charge of the up-town branch of the Colwell Lead Co. in the days of the elder Hooper, and he is one of the very few thorough men I have known in this or any other business. If any question arises Harry Smith and T. W. Lawton, of the Locke & Smith Co., always accept Al. Pearson's opinion as final.

Dimock & Fink have a fine shop in their 125th St. establishment. The foreman, Samuel Jackson, has been with them over 20 years, and before that he held a similar position in our old shop in Brooklyn.

Brass shops in New York today are few and far between, but there are lots of them in Newark, N. J.

NEW ENGLAND NOTES.

The bill which is before the state legislature in Rhode Island providing for the appointment of a state board of examiners of plumbers, who shall have the licensing of such workmen, is meeting with the approval of masters and journeymen alike. At a recent hearing there were many plumbers present who declared that the passage of the act would result in better sanitary conditions.

The new quarters for W. O. Davis, plumber, at Chester, Vt., are nearly ready for occupancy. The new headquarters will be much more convenient than the old and will give Mr. Davis one of the best locations in his town.

Desmarais & Bourrett have enlarged their plumbing establishment at Lowell, Mass., by the erection of a 40-ft. structure in the rear of their present shop. The new building will be used as a storehouse for the large stock which their steadily growing business demands.

Carl F. W. Wagner has established a plumbing and heating business in the town of Dedham, Mass. Mr. Wagner is an expert in both lines himself and will employ none but experienced men.

The town of Pascoag, R. I., has made an appropriation for the installation of a new heating system in the high-school building. No plans have yet been made with regard to the letting of the contract.

Joseph F. Hebert, a former resident of Pittsfield, Mass., has recently bought out a plumbing establishment in the city of Westfield, Mass.

Charles O. Murphy, Greenville, Conn., has practically completed his large plumbing contract with the Ashland company at Jewett City, where his men have been engaged for 15 weeks past.

John H. Maguire has the contract for remodeling the entire plumbing system in the residence of Mrs. Henry Heywood, Gardner, Mass. The house is an extensive one and it is planned to fit it with open plumbing of the latest and most approved design.

The E. J. Murchy Co., Attleboro, Mass., which had a plumbing store in the Bronson annex in that town, has closed its business and been consolidated with the Bagnell Construction Co., Boston.

F. W. Engert & Son have been awarded the contract for the plumbing in the new store and apartment-block soon to be erected for Mrs. Ellen Sayles, Waterbury, Conn. The building will contain 12 apartments, each with separate sanitary arrangements, and four stores.

The board of health of Springfield, Mass., met a committee of the master plumbers of that city a few days ago to consider the revision of the present plumbing rules, so that the reconstruction would be more clear. The rules will not be made more exacting or more stringent, but for many years they have been ineffective, it is claimed, and the change has been considered for some time. The committee of master plumbers who are looking after the matter for their association is made up of George Smith, J. J. Cotter, John Howland and John W. Kennelly.

The judiciary committee of the Rhode Island state legislature has under consideration a bill to allow the town of East Providence to appoint an inspector of plumbing. Among the features of the bill is a clause giving authority to impose a fee of not more than $50 on plumbers doing business in the town. This feature of the measure is designed to prevent outside plumbers from doing business in the town without proper restrictions. The bill has aroused little if any opposition and it is expected that it will be adopted.

A steam heating system for the Marieville school in the town of North Providence, R. I., is being advocated by the school committee, but as the amount sought for schools is already largely in excess of last year the chances of securing a sufficient appropriation is believed to be doubtful.

NEW HAMPSHIRE.

Henry G. Hayes, Dover, N. H., has been awarded the contract for plumbing and steam-heating the three flats built by Mrs. Charles H. Otis on Central Ave., in that city.

H. H. Barber, Milford, N. H., has formed a stock company to take over his heating and plumbing business. He is president of the new organization, and also acts in the capacity of secretary. Harry Hemenway is manager. The business will be conducted at the old stand.

Lee Bros. Co., Concord, N. H., have been awarded the contract for heating and plumbing Councilman Robert F. Keane's new residence on North St. The house is a large one of modern construction and the plumbing will be modern throughout.

VERMONT.

O. L. Ayers has purchased the plumbing and heating business of W. J. Redmond at Waterbury, Vt. Mr. Redmond retires from business to accept the position of engineer in a large lumber mill at Fayston.

Articles of incorporation have been filed by H. F. Martin & Sons Co., Swanton, Vt. The company is organized for the purpose of conducting a general plumbing and hardware business. The capital stock is fixed at $10,000. The incorporators are Sherill H. Martin, Annette M. Martin, Henry F. Martin and E. A. Ayers, all of Swanton, and E. H. Martin, of Burlington, Vt.

John Calder, who for some time past has been in the employ of Clark Bros., plumbers, Richford, Vt., has leased a store in that town, and is to engage in the plumbing, steam-fitting and tinsmith business for himself.

CHIPS FROM THE FIELD.

The Chambersburg Plumbing & Heating Co., Chambersburg, Pa., has secured the contract for the plumbing and heating of the new Washington hotel in that city. This is the largest contract of its kind ever awarded in that vicinity.

Joseph P. Martin & Son, Fort Wayne, Ind., have been awarded the contract for the plumbing in the new custodial cottage at the Indiana State school.

Derheimer Bros., Fort Wayne, Ind., have been awarded the contract for installing the plumbing in Wayne Knitting Mill Co.'s club building.

R. B. Mellen, of the Pittsburgh banking house of that name, has let the contract for the erection of a $300,000 residence, and the contract for the renting has been awarded the Baker-Smith Co., whose local branch offices are in the Frick Bldg., Pittsburgh.

Thomas Haverty Co., Los Angeles, Cal., has been awarded the contract for the installation of the plumbing system in the new Manual Training School at Santa Barbara and Vermont avenues. Consideration, $24,000. Architects Parkinson &Bergstrom, Security building, prepared the plans.

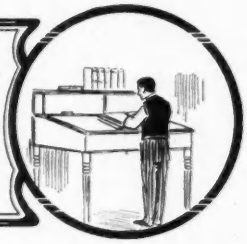
The Citizens Plumbing & Sheet Metal Works, Jonesboro, Ark., has surrendered its charter to the secretary of state. The company was capitalized at $5,000. The stockholders were H. A. Lesmeister, C. A. Pilquist and W. S. Lewis.

Lewis & Kitchen Co., Kansas City, Mo., has just secured the contract for the construction of a new garbage crematory at Topeka, Kan. The consideration is $16,700.

The Max Glauber Tool & Specialty Co., New York City, has been incorporated with a capital of $2,000. The incorporators are Frank Van Blarcom, 73 East 128th St.; John Singleton, 656 Second Ave.; James H. Coen, 1245 East 31st St.; all in New York City.

BUSINESS MANAGEMENT

NEW METHODS FOR OLD



WHICH IS THE BETTER TRADE TO LEARN?

Editor "Domestic Engineering": I notice that you ask in your paper which trade I would choose for my son (plumbing or heating), were I to select one for him at the present time?

As things now look and judging the signs of the times, I would advise him to become a plumber and to learn the trade first and then the business in its best and broadest sense. I believe that the day is soon to come when a large share of our heating will be done by electricity. That more of it is not done now is because it is too expensive. But wait until more water-powers like Niagara are "hooked up" all over the country, and the steamfitter will become an electrician.

The plumbing trade and business is getting broader every year. Better goods, more sanitary methods are coming into practice all over the country. Why 25 years ago a bath-room was regarded as a luxury. Today it is looked upon as a necessity, and people of very ordinary means find it impossible to get along without the bath-room, which a quarter of a century ago could only be afforded by wealthy people.

Let the boy learn to be a sanitary plumber and you can't possibly go wrong.

Chicago. E. F. D.

"VAN WINKLE'S" COUSIN AWAKES ALSO.

Editor "Domestic Engineering": I notice that there is considerable discussion in the trade press and other papers about plumbers having, or being obliged to have a license.

Now, I wish to state that I do not believe in it a little bit. This is supposed to be a free country and I fail entirely to see why a decent respectable man should be taxed for the privilege of doing an honest business. Plumbers in times gone by have managed to get along pretty well without being obliged to put money into city treasuries only to have it gobbled up by some gang of grafters. The country did not go to the eternal bow-wows either in the days when the plumber worked without a license. It seems to me that a whole lot of fellows are making a mountain out of a mole-hill in this respect and many others.

Chicago. Kicker.

Of course this is a free country. That's the trouble, it's been too blamably much so, and under the conditions which our esteemed correspondent, "Kicker," alludes to, about every Jack Leg in the land who knew enough to open up a Limo wrench could open up a shop and run a plumbing business or at least sling out airs as a plumber in the smaller towns and cities.

Thirty or forty years ago the population in the United States was much smaller than at present and our cities and towns were not so closely built up. Bath-rooms were a luxury, the need for better work and more of it was not as pressing as it is to-day.

The business had not grown to its present great proportions, but it has been clearly demonstrated that to-day we must regulate matters in some manner. For many reasons this work must be put in according to the best devised sanitary methods. Some plumbers would do this anyway—a few of them at least—others would not and must be held up to the mark by some kind of laws.

Some plumbers are capable of doing this work in fine shape, some are not. Those who are really capable do not fear any fair examination nor set of fair question papers and welcome the test for they well know that it's going to put out of business a set of men who are clearly incompetent.

It will not of necessity hold these people out, for all they have to do is to prepare themselves and pass the examinations.

A physician must study for years to prepare himself to pass a severe examination before responsible parties. Is it not fully as important that the plumber be educated to the proper practice of sanitary science?

A NATIONAL LAW AGAINST WATER POLLUTION.

Another question, we desire to bring before our readers, is this:

Would it be desirable to have a national law, strictly enforced, which would prevent the great pollution of the waters of our rivers, streams and lakes?

We believe that several states have laws which bear upon this subject, but nevertheless the pollution seems to go on just the same to a greater or less extent. Refuse of all kinds is deposited in our rivers and lakes.

Particles of wood, earth, soap, dust, coal, hair, fats, various dyes and chemicals, etc., all go to swell the number of products which are emptied into the aforesaid waters. Is it not high time that some law was enacted and enforced which would regulate these practices effectively?

We desire to hear from readers located along the lines of various rivers and lakes, believing that they can give us some mighty interesting and instructive pointers if they so desire.

WATER POLLUTION VS. THE MANUFACTURER.

Bearing upon the question of a national law against the pollution of our rivers and lakes the question of the damage to the manufacturer comes up. How shall he dispose of his refuse if prevented from emptying it into the rivers and lakes? Shall he receive any recompense from the government for being obliged to perhaps install some different method of refuse disposal? We throw this question open for discussion, to our many readers in all parts of the country.

A PRACTICAL MANUAL OF STEAM & HOT-WATER HEATING

BY EDWARD RICHMOND PIERCE

SECTION III

Yet, simple as this proposition seems, the great mass of the steam-fitting trade of this country is trying to make a radiator at a temperature of a trifle over 200 deg. at its surface work satisfactorily, when the figures, upon which they base the surface, require a temperature 40 to 50 deg. higher by many of the rules.

Under present commercial ratings of boilers for both steam and water, the majority of rules in use, even those based upon correct measurements of wall and window surface, are but little better than the old "rule of thumb" guess-work ratio rules.

It is time that some of the simple facts be plainly set forth and the trade be shown how to figure radiation correctly at any required temperature of steam or water.

I realize that in attempting this it will be necessary to go over some ground that will seem almost trivial to many. The heating engineer, however, who gets out into the highways and by-ways, will appreciate how often and in what unexpected quarters he is asked to show customers how to measure a room. It is the purpose here to go into sufficient detail in all essential points to cover the questions that have been constantly presented to me by customers through the many years that have elapsed since I first began answering such questions. It is, first of all, necessary to measure the length, width, and height of each room, and multiply the length by the width and that sum by the height to secure the

FORM AB.

Measurements and figuring data from ..... Architect

House of ..... Street .....

Street No. ..... Town .....

Telephone No. ..... County .....

R. F. D. No. ..... State .....

Rough Sketch of Rooms or Floor in this Space.

Name of Room and Temperature Required		Temperature Cold air.	
Compass location. Feet exposed wall. Prevailing wind. Elevation above sea.		Square feet Exposed floor. Temperature of Cold side of floor.	
Kind of wall and condition.		Square feet Exposed ceiling Roof or side of Bay-window. Temperature of Cold side.	
Size of room in Feet and inches.			
Number, size and kind of Windows.		General Remarks.	
Number, size and kind of Doors to outside air or Colder Rooms.			

A Useful Form for Measuring Up and Calculating on a Proposed Installation.

cubic contents of the room. Suppose we have a room 16 ft. long, 15 ft. wide and 11 ft. high. The length and width multiplied, 16×15=240; this multiplied by 11 = 2640 cu. ft.

We have agreed that the heat is lost through all factors composing the room. We have found the cubic contents, but unless we find how many heat units are lost each hour through walls, windows, floors, ceilings and probable leakage, what good will the knowledge of cubic contents do? We must now look for exposed walls. By this is meant, walls exposed to the outside air, and also walls exposed to cold inside rooms. The fitter must never, for a moment, forget while measuring a room for heat-loss, that heat will always pass to a colder body with which it is in contact, and if one side of a room is to have on its outer side a cold room, note must be taken of it, just as surely as though the other side of the wall was surrounded by out-door air.

The fitter who is preparing to "measure up a house for heating," should first prepare a form upon which he can quickly and accurately place the data he requires, and without which he can only do a guesswork job.

A form, something like Form AB, answers very well, although some find more elaborate ones desirable, but for ordinary residence-work the one here given serves very well.

Care must be exercised with regard to floors. Many houses have cellars under a few rooms. Some, in the South and Middle West, have no cellars at all, the houses being built on piers. In all sections, rooms on the second floor will be found with the whole, or a portion, of a floor space over an open porch, and often with unusual wind-exposure. All such conditions must be met by extra radiation to supply the loss. Another very common condition, and one often overlooked, is the thin flat roof over a room which may have been added to an old house. Such a roof dissipates heat wonderfully as we shall discover later, when the measurements have been made and we begin to count up the heat-loss through each factor.

We now find the square feet of wall surface exposed to colder air than the room we are preparing to heat.

Suppose the room we used to illustrate the cubic-contents rule, has one side 16x11 ft., and one end 15x11 ft. exposed to the out-door air. In addition, there are also four windows, each of which are 6 ft. 10 in. x 3 ft. 8 in., the first thing usually done is to get the gross square feet of exposed wall surface and from this deduct the window-opening. The end and side-wall lengths equal 16+15=31 ft; the height is 11 ft.; then the total length, 31 ft. multiplied by the height, 11 ft. = 341 gross sq. ft. There are four windows, each 6 ft. 10 in. x 3 ft. 8 in., or 25 sq. ft.; then 25×4=100 sq. ft. of window. Deducting this from the gross wall surface and the real exposed wall is 341—100=241 sq. ft. real wall. The material of which the wall is constructed, and its condition is now to be noted.

There is not much difference in the loss of heat per square foot, between a well-built wooden wall, cross-boarded, well-papered and clapboarded, and a well-built hard brick house wall. Not nearly so much difference as often exists between two brick walls.

While we shall have to refer to this part of the subject again, it seems important to take up this matter of walls at some length right now, in order to explain the absolute necessity of securing data regarding them for future use.

It has not been called to the attention of the trade generally, I think, that a vast difference in loss of heat-averages, occurs in brick buildings of identical areas. I do not think it had occurred to anyone to investigate it until concrete-block houses began to be quite generally used. Occasionally some fitter would find himself in trouble with a brick house-heating plant in wet, windy weather, and usually blamed the chimney or the fireman, or most anything except the real cause.

Recent investigations have shown that fine hard brick will rarely absorb over 5 per cent of their weight of water; good brick, not over 10 per cent; while many soft brick take up from 25 to 40 per cent of their weight of water. Improved methods of producing cheap brick have enabled contractors to secure good-appearing brick, with a ringing sound when struck, that will, notwithstanding their good appearance, absorb water like concrete.

When it is remembered that one heat-unit is the amount of heat required to raise one pound of water one degree of temperature and that that same amount of heat will raise five pounds of dry masonry one degree, the necessity of noting the quality of brick in walls becomes very evident to one who is to come under contract to furnish heat in all weathers. In some sections of the country, it is the habit to use fine hard brick of the best grade, for the front portion of buildings and cheap brick for the rear sides and end. It is usually this portion of the building where heating complaints originate in wet weather.

It is not unusual to find rooms finished close under the roof. These rooms should be measured with great care, especially the ceiling, when lathed and plastered close to the roof. Surface of this kind is especially affected by both wind and moisture.

If the building is of concrete, either block or poured, special attention should be then given to finding out if it has been water-proofed, and to what extent; also if plastered directly on the concrete, or if studded and lathed inside the concrete wall.

If studded, lathed and plastered, an increase of 15 per cent when the outside wall of concrete has not been water-proofed will usually be sufficient. If plastered directly on to the concrete, it will be found very difficult to provide sufficient radiation to keep the rooms both warm and dry in wet weather. An excess of about 60 per cent with some grades of concrete will not be too much allowance for wet weather, accompanied by high winds, while in dry weather, the same amount of radiation required for first-class brick walls is ample. Concrete which has been thoroughly waterproofed throughout its entire structure, or which has been water-proofed on all its surface inside and out in block construction, makes an ideal wall from a heating point of view. Just in proportion, however, that concrete absorbs water does it depart from the ideal.

The steam-fitter and owner should constantly bear in mind the fact that water is the greatest absorber of heat known. If a building is constructed of material that absorbs and holds large quantities of moisture, a corresponding excess of heat must be furnished during any period of excessive moisture.

(To be continued.)

Bass Bros., Louisiana, Mo., have been awarded the contract for the plumbing in Norman Porter's new residence in that town.

The Shanley & Boyd Co., Davenport, Ia., has been awarded the contract for the plumbing and lighting of the new postoffice in that city.

The Chambersburg Plumbing & Heating Co., Chambersburg, Pa., has secured the contract for the plumbing and heating of the new Washington hotel in that city. This is the largest contract of its kind ever awarded in that vicinity.

DOMESTIC ENGINEERING

THE OPEN DOOR TO WEALTH
IN HEALTH

TREATING SPECIFICALLY ON

SANITARY PLUMBING
HEATING
VENTILATING
STEAM-FITTING

ITS ESSENTIAL AIMS ARE THE ADVANCEMENT OF PRIVATE AND PUBLIC CLEANLINESS AND COMFORT AND THE FURNISHING OF STIMULATIVE EFFORT TO THOSE ENDEAVORING TO OBTAIN PERFECTION IN NATIONAL SANITATION.

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NOTICE TO ADVERTISERS.

Copy and cuts for advertisements intended for a particular issue should reach the office of Domestic Engineering on Monday of the previous week if it is desired that a proof of the advertisement shall be submitted. New advertisements can be received up to noon of Monday of the week of issue, but no proof can be shown.

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SPECIAL NOTICE TO READERS.

Our readers are invited to send in articles on any topics covering sanitary interests as outlined above. Photographs and drawings with descriptions of special interest to plumbers and steam-fitters are welcomed. "Domestic Engineering" pays at space rates for all articles, notes, criticisms and news data so contributed.

CONVENTION DATES.

Apr. 26-30, 1910.—The 30th annual convention of the American Water Works Association at New Orleans, La.

April 29 and 30, 1910.—Fifteenth annual convention of the Washington State Association of Master Plumbers, at Seattle, Wash. Headquarters at Butler hotel. President, A. M. Goddard, 2413 Pacific St., Tacoma, Wash.; secretary, James Griggs, 2805 S. 6th Ave., Tacoma, Wash.

May 3 and 4, 1910.—Annual convention of the Pennsylvania State Association of Master Plumbers, at Lancaster, Pa. Convention meetings in the Orange Street Opera House. Headquarters at the New Stevens House. President, Charles L. Titus, 37 Morgantown Street, Uniontown, Pa.; secretary, Harry L. Burd, 85 Gallatin Ave., Uniontown, Pa.; treasurer, John H. Birchall, Allentown, Pa.

May 10, 1910.—Ninth annual convention of the New Jersey State Association of Master Plumbers, at Paterson, N. J. Sessions in the Miriam Barnet Memorial School, corner Broadway and Erie Railroad. Officers: President, Geo. S. O'Neil, 41 Bridge St., Paterson, N. J.; secretary, Henry F. Baillet, 191 Clinton Ave., Newark.

May 11, 12 and 13, 1910.—The fifth annual convention of the National Supply & Machinery Dealers' Association and the eighth annual convention of the American Supply & Machinery Manufacturers' Association, in Atlantic City, N. J. These conventions will be held co-jointly.

June 1, 2 and 3, 1910.—Second annual convention of the National District Heating Association, at Toledo, O. Headquarters at the Boody House. President, A. C. Rogers; secretary, D. L. Gaskill, both of Toledo, O.

June 13, 14, 15 and 16, 1910.—The 22nd annual convention of the National Association of Master Steam and Hot Water Fitters, at Atlantic City, N. J. Headquarters at the St. Charles Hotel. President, Charles A. Geoghegan; vice-president, Edward B. Denny; treasurer, Juan A. Almirall; secretary, Henry B. Gombers, 260 West Broadway, New York city.

June 21 and 22, 1910.—Annual convention of the National Association of Brass Manufacturers, at Atlantic City, N. J. Commissioner, Wm. M. Webster, 1112 Schiller Bldg., Chicago.

June 28, 29 and 30, 1910.—The 28th annual convention of the National Association of Master Plumbers, in Chicago. The officers of the association are: President, Walter D. Nolan, 721 14th St., N. W., Washington, D. C.; vice-president, A. Selden Walker, 341 Main St., East Orange, N. J.; secretary, Samuel Artz, 3028 M St., N. W., Washington, D. C.; treasurer, William McCoach, 1607 Sansom St., Philadelphia.

June 30 and July 1, 1910.—The semi-annual meeting of the American Society of Heating and Ventilating Engineers, at St. Louis, Mo. The officers of the society are: President, Prof. J. D. Hoffman, Lafayette, Ind.; first vice-president, R. P. Bolton, New York City; second vice-president, S. R. Lewis, Chicago; secretary, W. M. Mackay, New York City; treasurer, U. G. Scollay, Brooklyn, N. Y.

BUSINESS VENTURES.

Thomas Coleman has opened a plumbing and heating establishment at Galva, Ill.

Geo. S. Fleisher, has opened a plumbing establishment at the corner of Martine and South Lexington avenues, White Plains, N. Y.

Wm. Blackwood has opened a new plumbing establishment in the Proctor Journal Bldg., Proctor, Minn.

J. E. Stevenson has purchased the plumbing and heating business of Chas. McGovern, 220 North Main Ave., Sioux Falls, S. D.

Frank Theasby has opened a plumbing establishment in the Marceno Bldg., Saratoga, Cal.

QUESTIONS AND ANSWERS

THE BANK BUILDING'S UNSATISFACTORY HEATING PLANT.

Editor "Domestic Engineering": Referring to S. D's. unsatisfactory heating plant in a bank building at Burlington, Ia., permit me to give the following suggestions:

I would leave the job just as it stands, only put the first big radiator on the west side on the east side main. I would put the 20-foot radiator that is marked 1-in. back to the 2-in. main, that is, I would feed it direct off the main, and the last radiator I would pipe so, that it would make but very little difference whether it was a wet or a

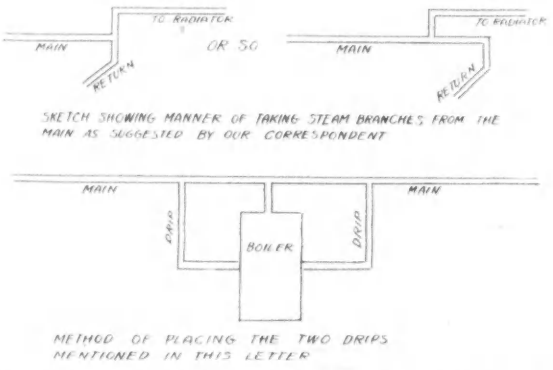


Fig. 1. Showing Suggested Changes to Make Bank Heating Job Work Right.

dry return. The dry return requires smaller pipe but has a tendency to get air-bound on a long stretch of pipe.

Just where the mains leave the boiler I would put in two drips to take care of the priming of the boiler, which often happens when a boiler is fired heavy or a quick fire is built up. I would make them at least 1½-in., as shown in sketch (See Fig. 1) and put them near the boiler.

This is the best explanation I can give without further information.

Catonsville, Md. A. Journeyman.

TWO CURRENTS OF WATER IN A HOT-WATER PIPE?

Editor "Domestic Engineering":—A few days ago I heard a man who claims to be a fitter state that there were two currents of water in a hot-water main, one flowing away from the boiler while the other flows toward it. Now what do you think in regard to the matter? I should like your opinion in case you care to print the inquiry.

Boston, Mass. High Street.

We have heard several times about this two-current business in a hot-water main, and in the columns of "Domestic Engineering" during the past year one or two articles have been published dealing exclusively with this one particular point of hot-water circulation. At this time we do not care to write further upon it but ask that some of our readers send us their experiences or practical observations. Otherwise we will refer to the matter more at length in a later issue.

A HOT WATER JOB WHICH BALKS.

Editor "Domestic Engineering": I would like to ask your readers if any one of them has ever had a hot-water job which has acted like the one I illustrate herewith (Fig. 2), and if so it would please me to find out how the trouble was remedied.

The hot water faucet at the sink will run only part of the time. To get it started it is necessary to open the faucets at the bath-tub and the lavatory and leave them run about a minute, after which the faucet at the sink will do its duty. It can then be turned off and on as often

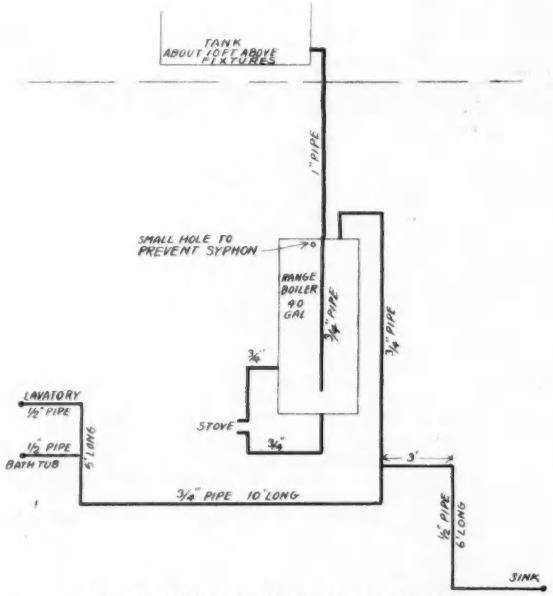


Fig. 2. Sketch of Balking Hot-Water Job.

as desired and work fine for hours, but in the course of a day it seems to get air-bound, and the above operation has to be performed again.

Trusting that some one of the fraternity will come to my assistance, I wish to remain,

Yours truly,

Hammond, Ill. D. V.

WHY NOT?

Editor "Domestic Engineering":—I've been a constant reader of "Domestic Engineering" for over a year and a half, and must say I have obtained a great deal of good information therefrom, so kindly allow me to ask, "Why is it that a range-boiler can't be connected to a gas-range in order to heat the water"? If I am not mistaken, I've

seen this done in a northern town where there was nothing but manufactured gas. Now I've been told that a range-boiler can only be connected to a gas-range where there is natural gas. It seems to me that if it could be done in one place with manufactured gas that it also could be done in another place. Kindly inform me as to my inquiry.

Houston, Tex. A. E. H.

CERTAINLY PLUMBERS OR ANY ONE ELSE SHOULD USE FORCE-PUMPS.

Editor "Domestic Engineering": I notice that remark by a Chicago sanitary inspector about not using force-pumps.

The end justifies the means. If one can do a job of clearing out a stopped-up pipe by a force-pump or a "plumber's friend" in half or quarter of an hour that otherwise might require a day's time, use the pump, I say.

We do not care about that kind of jobs anyway. There is no money in them and we have to charge for the plumber's time, which nine times out of ten makes the customer sore.

One excellent master plumber I once knew always gave each customer a plumber's friend (with each complete bath-room outfit) and showed them how to use it. He said that he did not care to be bothered with that class of work unless absolutely necessary, and, "by gum," I guess he was right.

St. Louis, Mo. Stanley.

WATER-BACK OR WATER-FRONT WHICH?

Editor "Domestic Engineering": Which is better to use in a stove where you can have a choice, a water-back or a water-front? I should very much like to hear from the trade generally upon this subject.

San Francisco, Cal. Subscriber.

We have asked our practical man about this question and he says to let it go and have the boys send in some data on this point, after which he will relate some of his own personal experiences.

EXTRA ALLOWANCE MADE FOR COILS IN HEATING BOILERS?

Editor "Domestic Engineering":—When a coil is placed in the fire-pot of a steam or hot-water boiler, and said coil heats a 30, 40 or 60-gal. range-boiler, does the heating contractor make any extra allowance or rather does he increase the size of the steam or hot-water boiler?

I should appreciate an answer from both you and the trade.

Denver, Colo. Hannighan.

Frankly speaking, we believe, it is not the general practice to make any extra allowance in size on the heating boiler, when such coils are put in, the reason being that in nearly all heating jobs the boilers are figured anywhere from 25 per cent. to 50 per cent. larger than what would actually be required to do the work, and the coil would not take up all this excess.

Should a heating boiler capable of carrying 1,000 ft. of radiation be hooked up to 1,000 feet of radiation and a coil added extra to the fire box it is apparent that the boiler would have to be crowded to do its work.

If any one thinks to the contrary and can prove it, let the party send in the data, and we'll publish same together with further information upon the subject which we withhold at this time.

THAT UNSATISFACTORY HOT-WATER JOB.

Editor "Domestic Engineering":—In your issue of March 5th I notice that a man at Rouses Point, N. Y., is having some trouble with a hot-water circulation job. After studying his sketch and the data he submits I made the enclosed sketch (see Fig. 3), showing some alterations

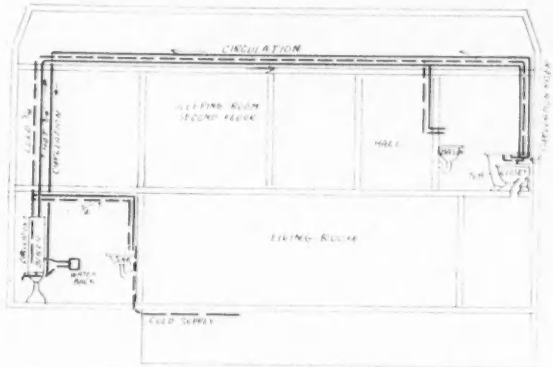


Fig. 3. Sketch showing Changes Which Will Cure Sick Hot-Water Job.

which, when made, should make the system work Okay. With a small tank this job would probably work even better. I submit my plan or sketch to the criticism of others more advanced in the technicalities of the craft.

West Brighton, S. I. C. Birmingham.

THE EVER-BUSY RANGE-BOILER.

Editor "Domestic Engineering":—One of my customers has some trouble with a very noisy range-boiler. I have examined the pipes and water-back and it is not stopped up and yet the job still pounds and hammers. What can I do?

Washington. Potomac.

Put a level on the pipes connecting water-front and range-boiler. See that they are pitched so as not to pocket any air, or any other pipe lines either.

If it is a large-sized range which has very hot fires in it through the day and only a small sized range-boiler you probably have a case where steam is generated.

Use either a smaller water-back ,or else plaster the old one over with fire clay thus reducing the amount of heat thrown against it.

HOW SHOULD THE VALVE BE PLACED?

Editor "Domestic Engineering":—Through the "Questions and Answers" department of your paper will you please tell me how the valve should stand on the steam main? Should the stem point straight up, at an angle of 45 deg. sideways or stem point downward? I would be very much obliged for some information.

St. Louis Mo. "Not A Fitter."

Our correspondent does not state whether it is a gate or a globe valve to which he has reference. If it is a globe valve it should stand with the handle pointing straight out sideways from the pipe or otherwise the

diaphragm of the valve will form an obstruction. Globe valves are better used on vertical pipes. With the gate valve it does not matter at which angle the stem points only as a matter of convenience in grasping the handle. This class of valve should always be used when it is desired to have a free and unobstructed flow of steam or hot water on the run through the main.

EXPLAINS WHY COIL REVERSES.

Editor "Domestic Engineering": In the January 29th issue of "Domestic Engineering," you show a range boiler connected to furnace and gas-range; and ask some one to explain why the hot water backs up the cold water pipe.

This is due to the fact that the supply to the coil in the gas range is connected to the top of the boiler and the supply to the hot-air furnace is connected to side of

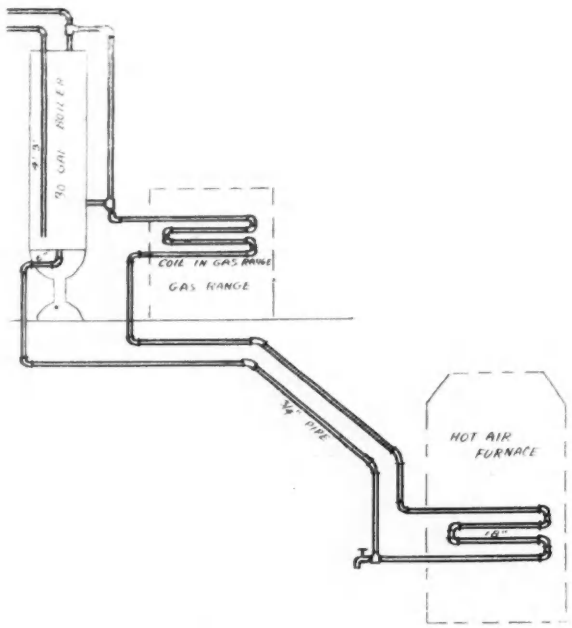


Fig. 4. How Reversing Coil Can Be Cured.

boiler. When the water reaches a certain temperature in the hot-water boiler instead of circulating from hot air furnace to side of boiler it just works vice versa. The cold water comes out of the side of the boiler instead of bottom. It passes down through the hot-air furnace back up through the return pipe passes by opening in bottom of boiler through coil in gas-range and enters at the top of the boiler.

I herewith enclose sketch of the proper way to make this connection, I have the same arrangement in my residence here in Gettysburg with the exception of two additional features, one is that I have a coal range connected in my basement in the laundry in connection to this system and I also have a gas water heater connected between the coil in gas range and the top of the boiler. Everyone of the connections work satisfactorily one at a time or all at the same time. Hoping that this information may be of some value, I am, Yours truly,

Gettysburg, Pa. A. B. Plank.

Plumbers, that go to convention pow-wows,
Insure against the "demnition" bow-wows.

WHAT'S THE MATTER HERE?

Editor "Domestic Engineering":—Herewith sketch of a boiler-connection put in by one of my plumbers and it will not work. Please give me information why it will not do so.

It is a new job with 100-gal. boiler; new water-back, no traps in it; water-back of cast-iron perfectly free; and

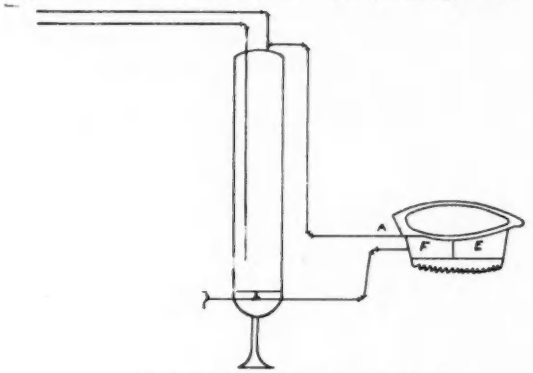


Fig. 5. What's the Matter Here?

fire in stove from four o'clock in the morning to nine at night.

This job is used for heating hot water for kitchen and bath. The depth of the fire-pot is 10 in. and its width 14 in. It is of oval shape. It may be asked why I did not tap in the side of the boiler instead of the top. I did do so at first with a 45-deg. connection, and it would not work.

I also put in a trap on the lead to the water-back to cause a resistance in the flow of the water but with the same result: No hot water.

Will you kindly publish this in your journal and it may have a few more guessing the same as it has me.

East Chicago, Ind. M. O.

BUSINESS CHANGES.

The Miller Plumbing Co. has succeeded to the plumbing business of Rause & Miller at Albia, Ia.

L. Ditter, Shenandoah, Ia., has moved his plumbing establishment into the Scenic Theater building in that city.

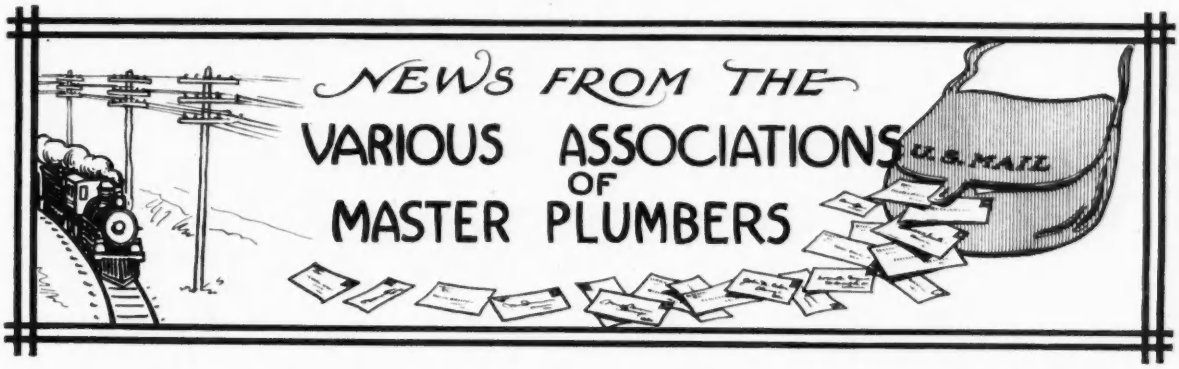
Alvin Dudfield has purchased C. B. Pogue's plumbing business at Liberty, Mo. Mr. Pogue intends to engage in the same line of business in Montana or Washington.

W. J. Mettzer is closing out his plumbing business at 118 South Pinckney St., Madison, Wis., preparatory to entering the service of L. Wolff Mfg. Co., Chicago, as traveling salesman. He will cover Wisconsin and a part of northern Illinois for the Wolff concern.

The Howden-Curtiss Co., successors to the Grand Rapids Plumbing & Heating Co., 17 Park St., Grand Rapids, Mich., have announced that they will dispose of the plumbing end of their business, but retain the heating and ventilating departments and give special attention to high-pressure work.

The plumbing firm of Birt & Vanderveer at Grand Rapids, Mich., has been dissolved. Mr. Vanderveer will continue business at the old stand, while Harry C. Birt has opened an up-to-date plumbing and heating establishment at 973 Quigley avenue in that city. Mr. Birt would like to receive catalogs from jobbers and manufacturers of plumbing and heating supplies.

The Modern Plumbing & Electric Co., Houston, Tex., has just moved into its elegantly appointed new building at 910 Fannin street, where it has arranged an up-to-date display of plumbing fixtures. This progressive and enterprising company was recently incorporated with a capital of $10,000. Its officers are J. E. Fisher, president; H. H. Fisher, vice-president, and C. A. Fisher, secretary and treasurer.



ARKANSAS PLUMBERS MEET IN FORT SMITH.

The plumbers of the state of Arkansas held their annual convention at Fort Smith, Ark., with headquarters at the Goldman Hotel, April 11-12. The sessions were presided over in a capable manner by the president of the state association, A. V. Rogoski, Little Rock. The active secretary, W. H. Bruce, Fort Smith, performed a double stunt of attending to his official duties and exercising his powers as one of the hosts of the convention.

The morning of the first day was devoted to the work of registration and there were shown to be 28 members in attendance. This was a goodly proportion of the association's membership of 38.

The election of officers resulted as follows: President, Louis Mandelbaum, Little Rock; vice-president, H. B. Meister, Fort Smith; secretary, Wallace Bruce, Fort Smith; treasurer, August Reichardt, Fort Smith. Executive Committee—Arthur Pfeifer, Little Rock; B. J. Dunn, Fort Smith, and L. Duggins, Fayetteville.

Among the entertainments arranged for the visiting delegates were a box party at the Airdome, where they witnessed the Manganoff-Downing wrestling match, and an elaborate banquet at the Goldman hotel. Other entertainments given in their honor were an automobile ride through the gas-well district and a dinner at the Electric Park.

ALABAMA MASTER PLUMBERS HOLD ANNUAL MEETING IN MOBILE, ALA.

The Alabama Master Plumbers' Association held its annual meeting in Mobile, Ala., on April 7th, with a comparatively large attendance.

The sessions of the conventions were held in the Odd Fellows' Hall and they were marked by an attractive absence of formalities.

President William Wilby, of Selma, presided and called the convention to order at the appointed hour, 10 a. m., after which Secretary Frank Samuels, of Selma, read his annual report. President Wilby followed with his annual address.

Immediately thereafter the convention closed the doors to spectators and the business of the convention was entered upon in executive session.

The following delegates were in attendance: W. W. Wilson S. E. Scholze, J. H. Hammill, John Crim, C. E. Cole, J. N. Martin, Charles Marnitz, President of the Birmingham local association; Hamilton Hines, E. P. Inscho, J. H. Thorp, J. M. Wright, A. H. Evans, A. B. Caldwell, F. E. Lawley, J. P. Brand, E. O. Mandy, W. L. Tarrant, J. H. Barber, C. E. Wilson, G. E, Hayden, W. C. Barber, E. Williams, J. E. Mason, all of Birmingham; M. B. Barrett and Chris Bailey, Montgomery; F. J. Black, Talladega; George Findlay, Greensboro; William Wilby and Frank Samuels, Selma; L. J. Leahy, T. J. Young, W. A. Copeland, S. B. Copeland, Thomas Wagner and F. G. Farno, all of Mobile.

The following officers were elected for the ensuing year: President, Charles A. Barnitz, of Birmingham; vice-president, Thomas J. Young, of Mobile; treasurer, W. W. Wilson of Ensley.

Charles Eckele, Chief Plumbing Inspector of Birmingham, was present as a guest of the association. Mr. Eckele was one of the founders of the association and takes a great interest in the work.

W. L. Copeland and C. L. Simmons were delegated by the local members of the organization to arrange for the entertainment and social end of the reception of the visiting delegates and their ladies and the following program was carried out in a most enjoyable manner:

Friday morning, between the hours of 10 and 12 the ladies were given a trolley ride all over the city and in the afternoon they were entertained at lunch at Klosky's from 2 to 4. After the luncheon they were entertained with an automobile ride from 4 to 6, and in the evening a theater party was given in their honor.

Friday morning at 8 o'clock the delegates left in automobiles on a trip to Dog River, where they spent the day in fishing and all kinds of sports, returning at night, while the ladies were taken down the bay on a steamboat ride, returning at 6 o'clock.

Birmingham was selected as the next place of meeting which will take place in April, 1911.

CLEVELAND PLUMBING EXAMINERS ORGANIZE.

The new board of plumbing examiners held its first meeting last week and organized by electing Herman Eckerdt president and William Spear secretary. The new board will hold examinations every Tuesday night in the city council chamber.

MILWAUKEE AND WISCONSIN NEWS.

Charles Polacheck & Bros. Co., dealers in lighting fixtures, at Milwaukee, suffered a $10,000 loss by fire recently in their establishment at 182-184 Third street. The fire is thought to have started from a match being thrown into a box of rubbish in an alley near the building. The greatest loss was from smoke and water besides the chemical mixture used in fighting the flames.

George L. Theon, Chicago, is gathering preliminary data for the sewage experts who will meet in Milwaukee next month with a view of deciding upon improved conditions for the city.

The A. C. Fuge Hdw. Co., of West Bend, has been awarded the contracts for steam or hot water heating and plumbing for three residences in Jackson.

Herman Hohensee, Milwaukee, has secured the contract for buildling sanitary sewers at Burlington for $3,966.

An Unusual Heating System

A heating system that is a radical departure from the usual methods, was installed some time ago at the plant of The Morse Chain Co., Ithaca, N. Y., and has since been in operation with successful results. This system dispenses with steam coils, registers, hot-water radiators and the usual adjuncts of a heating plant, and substitutes a series of ducts in the floors. Through these ducts is led exhaust steam, hot air or waste flue gases, depending on the heating medium most available. The floors are thus heated and radiate sufficient heat to keep the rooms at a comfortable working temperature. The feet of the men are kept warm, and as the air at the higher levels is materially cooler than at the floors, their heads are cool, thus giving working conditions of maximum efficiency. The construction and working of the system were described in detail in the "American Machinist" (Feb. 10, 1910), and we abstract the following from that article.

At the Ithaca plant, the pattern shop is heated by exhaust steam, traversing wrought iron pipes laid in the concrete floor. The main machine shop is heated by hot air, forced through a system of supply and return ducts built in as part of the concrete floor structure, and the blacksmith shop is heated by a circulation of hot flue gases through a system of tile pipes buried some little distance below the floor of the shop.

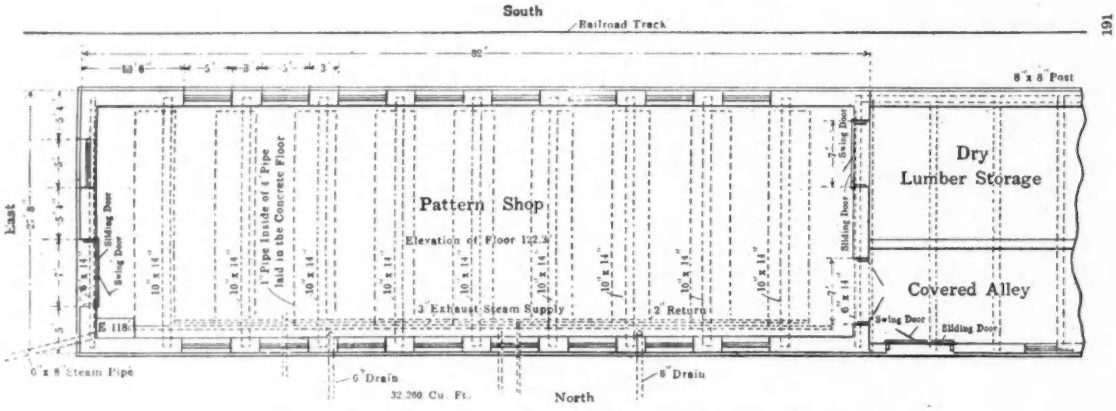


Fig. 1. Plan of Pattern Shop with Piping System for Heating.

Fig. 1 shows the ground-floor plan of the pattern shop, with the piping system for heating. This building is some 80 ft. long, 22 ft. 8 in. wide and 15 ft. 6 in. high, and has a cubical content of 32,250 cu. ft. The walls are of monolithic concrete; the roof is of 3-in. plank, covered with composition roofing and the building is isolated, except for the southern end, where it joins a lumber-storage and a pattern-storage building. Along the western wall is a 3-in. exhaust-steam supply main; 1-in. pipes tap from this main, run across the building, turn and run parallel with its length for a distance of about 5 ft., then turn again, cross the building again and enter a 2-in. return main that runs the length of the building on the same side as the supply main. The 3-in. supply main is at a level of about 1 ft. above the floor. The crosswise runs pass through 4-in. wrought-iron pipe buried in the concrete floor, with a covering of about ½ in. of floor-wearing surface. The 5-ft. runs lengthwise of the building are in an open gutter against the exterior wall; this gutter is covered with boards. Similarly the 2-in. return main is in a gutter along the opposite wall. The only exposed radiation in the room is the 3-in. supply main.

The total amount of radiation surface is 310 sq. ft. Of this 80 sq. ft. is in the room itself, while the balance, 230 sq. ft., is in the floor. There are approximately 104 cu. ft. of volume sq. ft. of exterior pipe radiating surface.

A familiar heating factor for factory buildings provides 1 sq. ft. of direct radiation surface for 75 to 100 cu. ft. of volume, with a generous addition for the sides exposed to northerly or westerly winds. The factors are for latitudes where the minimum temperature range is—10 deg. F. Accepting these factors, we see that the amount of radiation provided to heat this pattern shop through the floor is slightly less than the minimum indicated for factory buildings that are not unusually exposed to severe winds or low ranges of temperature.

The steam pressure is about 2 lb. back pressure. The following table shows the temperature at various levels when the external temperature was zero and the prevailing wind was blowing from the northwest at a velocity of 30 mi. per hr.

PATTERN SHOP TEMPERATURES.

(Temperature taken between heating pipes.)

	7 a. m.	10 a. m.	1 p. m.	6 p. m.
1 inch above floor	48°	52°	58°	59°
7 feet above floor	48°	52°	58°	59°
Under roof	49°	53°	58°	60°

January 4, 1910, minimum external temperature, 5 degrees below zero; maximum, 11 above zero. Wind northwest, 20 to 40 miles per hour.

Temperature over pipes 1 inch above floor same day, 7 a. m., 52° to 60°.

The heating system of the main shop differs from the pattern shop in that it uses a circulation of hot air through ducts instead of a circulation of steam through pipes. Two heaters are installed with space provided for a third (see Fig. 2), where the location for the third heater is indicated by dotted lines. The provision for a third heater is made to care for growth of the plant, as the two heaters now installed are more than ample for all the requirements of the main machine shop building.

Fig. 3 shows the basement plans of the machine shop. The point of entrance of the ducts is at the lower right-hand corner. The supply ducts connect with large chambers forming vertical flues at various points and

these in turn connect with a system of 15-in. tile bell-and-spigot pipe laid with Portland cement joints. These pipes are directly under the concrete floor and cross the building to a point some 5 ft. from the eastern wall, where they enter a large concrete duct running the full length of the building. From this duct other 15-in. tile pipes run back to the return flues and thence to the large return duct that conveys the circulating air back to the fans.

The long duct near the eastern wall also serves as a space for a long line of shafting from which the machine tools under the crane are driven through the floor by means of chains. A small amount of air finds its way through the belt or chain openings into the shop, but

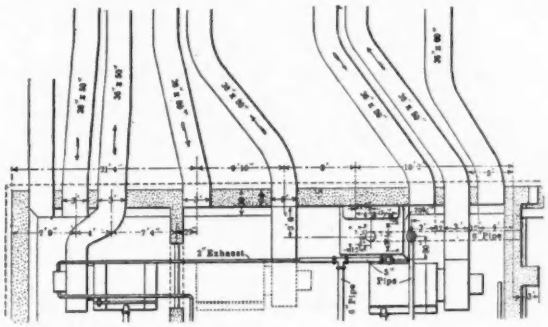


Fig. 2. Plan of Heating System in the Main Shop.

otherwise the circulating system is an enclosed system, provided dampers in two vertical heating stacks, to be mentioned later, are closed. A system of butterfly dampers is installed in the large heating ducts, so that any duct can be changed from a supply duct to a return duct at will, as the needs of operating the system demand.

Fig. 4 is a cross-section of the machine shop, which consists of a crane floor, shown at the right, a main floor

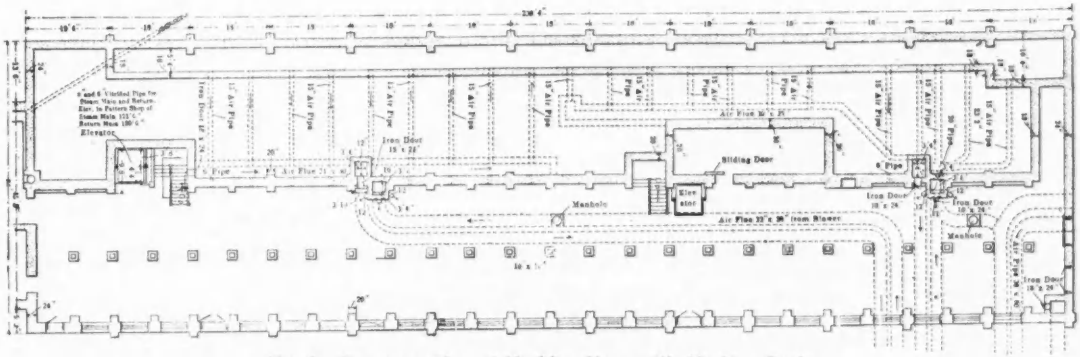


Fig. 3. Basement Plan of Machine Shop, with Heating Ducts.

at the left, a gallery floor above the main floor, and below a basement.

Fig. 5 is a section through a concrete duct entering a vertical flue, connecting into the 15-in. pipes that have been mentioned. Fig. 6 shows a galvanized-iron pipe with openings, two of which are located at such a level as to discharge air into the basement, two onto the main floor and two onto the gallery floor. These two stacks are the only provision made for distributing heated air directly through the room. When these two pipes are closed off, as is the case under ordinary shop conditions, even in the severest weather, no heated air comes directly into the machine shop, except such air as filters through the belt holes from the large duct along the eastern wall.

Of the two heating plants one has a combined heating surface of 2,500 sq. ft.; the other has 4,840 sq. ft., a total of 7,340 sq. ft. The cubical content of the main machine shop building, including the basement, is 514,500 cu. ft., or 70 cu. ft. per square foot of indirect radiating surface.

As a matter of fact, both fans are not used in heating this building except in severe weather and between the

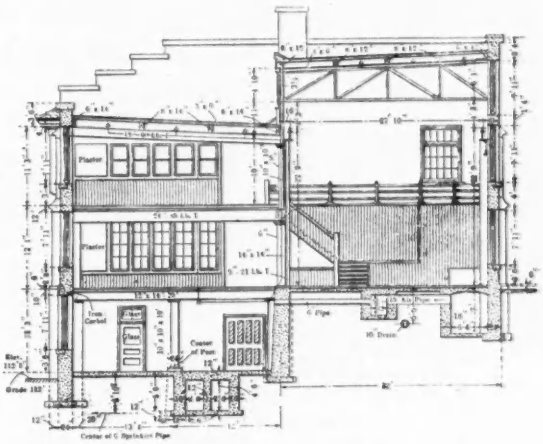


Fig. 4. Cross-Section of Machine Shop, with Piping for Heating.

hours of 4 and 7 a. m., at which time the two vertical galvanized iron pipes are employed and the air is recirculated before the workmen enter at 7 a. m. At that time the vertical stacks are cut off, the smaller heating plant is shut down and throughout the balance of the day the shop is warmed from the larger heating plant and entirely beneath the floor. Considering only the heating area of the larger plant there are 106 cu. ft. of volume per square foot of indirect heating surface. This is the factor that prevails under ordinary shop-running conditions. A frequently quoted factor for the indirect radiation needed for factories in latitudes where a minimum temperature is 10 deg. F. is from 50 to 70 cu. ft. of indirect radiation.

Temperatures were taken at a point 4 ft. above each of the floors on Saturday, January 8, 1910, the outside temperature at 7 a. m., being 4 deg. F., wind northwest, 6 mi. per hr.

	7 a. m.	12 m.	6 p. m.
First floor	62°	59°	64°
Second floor	62°	63°	69°
Third floor	64°	67°	73°

In the blacksmith shop, which is heated by means of flues gases, a No. 8 Sturtevant exhauster just below the level of the roof trusses sucks the flue gases from a large number of furnaces and forges and also draws a certain amount of air from the room itself through the space between the forge outlines and superimposed hoods. Under ordinary conditions this exhauster discharges through the

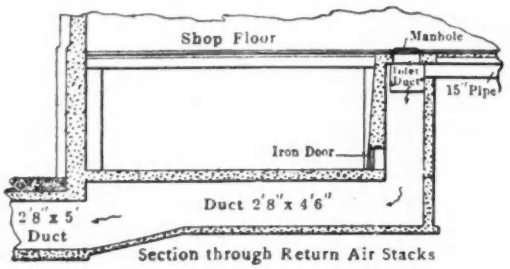


Fig. 5. Concrete Air-Duct.

roof by means of the short section of stack. In severe weather, however, a damper is closed and the heated flue gases are discharged through the pipe that follows the contour of the roof passing down to the ground. The pipe running down to the ground is 18 in. diameter. Flush with the level of the ground is the bell of a T having one outlet on the run 18 in. diameter and the other 15 in. diameter. This T and the connecting pipes are vitrified tile sewer pipe. Starting at this T the pipe runs in both directions

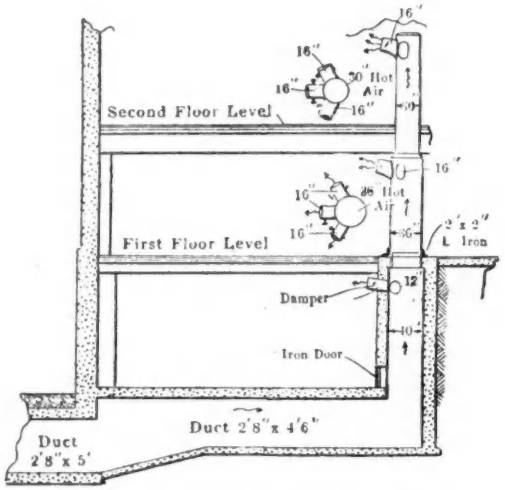


Fig. 6. Hot-Air Connections in Machine Shop.

around the shop near the exterior walls and discharges at one corner. Through this piping the flue gases pass during cold weather and thus thoroughly heat the floor or ground in the blacksmith and forge shops.

OBITUARY.

Wm. E. Williams, who has conducted a plumbing business in the Hill section of Brooklyn, N. Y. for nearly 40 years, died at his home in that city onApril 11th. He was born in New York City, April 10th, 1848, and had lived in Brooklyn since 1854. He is survived by three sons and a daughter.

Among the Wholesalers

MOVES FROM PASADENA TO LOS ANGELES.

F. B. Morton, manufacturer of special sanitary fittings and dealer in plumbing specialties, has moved his place of business from Pasadena, Cal., to his new store and warehouse building at 515 and 517 East 31st St., Los Angeles, Cal.

HEATING ENGINEERS TO MEET IN ST. LOUIS, MO.

The American Society of Heating and Ventilating Engineers will hold its semi-annual meeting in St. Louis, Mo., on Thursday and Friday, June 30 and July 1, 1910, according to information just received from Secretary W. M. Mackay, P. O. Box 1818, New York City.

CHANGE NAME AND INCREASE CAPITAL STOCK.

The Valley Plumbing and Machinery Co., Brownsville, Tex., has changed its name to the Valley Plumbing and Supply Co., and increased its capital stock from $10,000 to $100,000.

WILL MANUFACTURE VALVES.

The Charles Balanced Valve Co., Atlanta, Ga., has been incorporated with a capital of $30,000 for the purpose of manufacturing valves and other steam specialties. The incorporators are: M. M. Neese, W. C. Hunter and F. C. Charles.

ROLF-MARTIN CO. ENLARGING ITS PLANT.

Down in Ft. Wayne, Ind., the Rolf-Martin Co. has commenced the enlargement of its plant along extensive lines. The additional departments to the plant's activity will be of concrete construction and the work will be completed about the first of September.

ABENDROTH BROS. MOVE BOSTON BRANCH.

Abendroth Bros., Port Chester, N. Y., have announced the removal of their branch at Boston, Mass., to 294 Franklin street in that city, where they will display lines of their steam and hot-water heaters, furnaces and gas-ranges, and carry a stock of York and Crown Gem heaters, and repair parts.

CAPITOL BRASS BUILDS LARGE ADDITION.

A new 4-story building, 50 x 140 ft., is being erected by the Capitol Brass Works, Detroit, Mich., and the main building is also receiving the addition of another story. "Capitol" goods are getting a capital trade and more room is urgently needed to fill the orders. All these improvements will be completed during the next 60 days.

WILL MAKE STEAM AND HOT-WATER HEATERS.

Articles of incorporation have been filed with the secretary of state of Connecticut by the New Milford Foundry & Machine Co. The new company will manufacture steam and hot-water heaters with a plant located at New Milford, Conn. It is capitalized at $25,000 and begins business with $15,000. The incorporators are J. A. Northrop, H. G. Northrop, V. P. Staub, E. J. Emmons, H. G. Barton, W. G. Green and W. B. Hatch.

BUILDS PLANT FOR MANUFACTURE OF PLUMBERS' WOODWORK.

E. C. B. Judd, Inc., of Muskegon, Mich., is building a 3-story modernly equipped plant, specially designed for the rapid and accurate manufacture of closet-seats. It is expected that the plant will be operating full blast by the middle of July. The growing demand for the company's

products has made larger quarters imperative but with the new plant, the company will have no difficulty in taking care of its constantly increasing business.

GURNEY HEATER MFG. CO. TO MOVE ITS PLANT.

The Gurney Heater Mfg. Co., Boston, Mass., which for many years has had its plant located in East Boston, has decided to locate in South Framingham, Mass. Negotiations have just been completed through the Framingham Board of Trade. The company has taken over 22 acres of land of the Arlington St. extension in Framingham and the plans for the new buildings are now being prepared. The factory will be in operation, it is now expected, within the next year. The main building which will be of cement or brick construction will be L-shaped, with a total frontage of 1,500 ft. The estimated cost is $250,000. The company manufactures hot-water heaters, steam-boilers, radiators and ranges and also operates factories at Toronto and Hamilton, Ontario, Canada. At the present plant in East Boston, 400 men are employed and it is probable that as many, if not more, will be employed in South Framingham.

D. A. EBINGER CO. SOON READY FOR BUSINESS.

The D. A. Ebinger Co., Columbus, O., which was incorporated some days ago with a capital stock of $100,000, to take over the sanitary products department of the Columbus Heating and Ventilating company, has organized by the election of D. A. Ebinger president and treasurer, L. J. Ebinger vice-president, D. H. Ebinger secretary. The board of directors, in addition to these officers, is composed of Fred J. Heer and Everett Havmaker.

The company has taken over the new fireproof factory building in Locust street adjoining the Columbus Heating and Ventilating plant and will manufacture a superior line of sanitary fixtures, which has been made well known throughout the country.

All the men connected with the company have had long experience in this business. The company starts off with large orders booked, and in addition large Canadian interests have been negotiating for the Canadian rights to products of the company. New machinery has been installed in the plant, which will start operation about May 1.

SPLENDID OPPORTUNITY FOR PLUMBING INSPECTORS OUT OF WORK?

The Sewage Works at Willenhall, England, wants a manager and has specified his duties. He is expected to reside on the sewage farm; he must give a security of $250; he will be responsible for everything; be general manager of everything, including machinery, plant, tools, farm crops, etc.

Furthermore, he shall be on duty Sundays and weekdays and must not leave without special permission; he shall collect all accounts and pay them into the bank; he shall keep all books, check all time sheets and all supplies and take a record of all persons visiting the farm.

He shall make out special statements daily on the tanks, filters, land in use, pumping operations, record the rate of flow of sewage, change in the character of sewage, and shall carry out all the orders given him from time to time.

It is not stated what he shall do in his spare time, but for the above services he is to receive $7.50 a week. He is supposed to be possessed of two bodies for he must never leave the farm and he must make collections and deposit them in the bank at the same time. Surely our plumbing inspectors need not feel that there is not a field for their superhuman ability when such a position opens its arms to them. They evidently do things different in England. We would like to publish a photograph of the individual who drew up the list of duties. He had a great brain.

PITTSBURGH PENCILLINGS.

This city possesses one of the most remarkable stores identified with the plumbing and heating trade that is to be found in the country. It possesses all the up-to-date modern methods of the largest contracting firm, and at the same time if the retail buyer wants a towel bar he can obtain it—from the retail department.

Entering the place of business of Weldon & Kelley, Wood St., one cannot grasp the magnitude of the business of this firm. Every thing is done on and by a system. The retail department has its bargain days, while the contracting department is always on the lookout for new work.

During the past fortnight this firm arrived at the conclusion that some of its small bath-room fixtures stock should be reduced in order to obtain room for newer things. The large window was neatly arranged, and all of the smaller items used in a bath-room were displayed. True bargain-day prices were attached to each item.

Stress was laid upon the fact that all metal goods had a brass base. Towel-bars worth 75 cents went like hot cakes for 20 cents each. Soap trays that had been finding a ready sale at $1.25 went for 60 cents. Bath-seats sold for 50 off and all other items at the same ratio. Hundreds upon hundreds of new customers were brought into the store as a result of this special sale. A lot of stock was let out and items that were found to be slow movers in the past were quickly let out of stock.

Another special drive was made by the plumbing-department salesmen when they put out a complete bath-room set for $45, exclusive of the cost of installing, or labor. A bath-tub, wash-stand and closet went for this price.

The final results of this special drive exceeded expectations of the managers of the sales department. Some new contracts were obtained for the plumbing and lighting departments as a direct result.

The lighting department of this establishment is declared by others in the trade to be the most modernly equipped of any in the district. The fact is that the company has made a special effort for years to take entire contracts for heating, lighting and plumbing.

* * *

An important change in one of the leading plumbing contracting concerns in Pittsburgh, the Knoxville Plumbing Co., 137-139 Bausman St., Knoxville, Pittsburgh, has just been announced, and caused considerable surprise in both the jobbing trade and in general plumbing circles. Harvey F. Mechling, who for nearly ten years past has been identified with the Standard Manufacturing Co., also of Pittsburgh, and who has been calling on the plumbing trade throughout the South Side, Knoxville, and contiguous territory, has severed his connection with the Standard Manufacturing Co., and has accepted the responsible position of secretary and general manager of the Knoxville Plumbing Co. The change takes effect at once. Mr. Mechling is one of the most popular and best known plumbing supply salesman in Pittsburgh, and his friends and associates at his old place of employment expressed sincere regret at losing him from their ranks, but also wished him the real success that is sure to come through official identification with as strong and well known a concern as the Knoxville Plumbing Co. is known to be. He is a man who knows every branch of the plumbing supply business, and also has had excellent business training, and is a man of excellent judgment, so that he will be a most valuable man to assume active charge of the business. He succeeds John P. Moss, who has been manager for some time, but who leaves the concern to enter into the plumbing contracting business for himself, and who has already opened his new establishment. M. J. Meising, formerly identified with the George H. Soffel Co. and with the Buerkle Plumbing Co., both of Pittsburgh, has been engaged by the Knoxville Plumbing Co. as general foreman. He is recognized as one of the best plumbing and heating foremen in the business in Pittsburgh, and will have general supervision over all contracts being executed. The Knoxville Plumbing Co. has also made another important change, which is the addition of a new department of the business for steam and hot water heating, which will be conducted separate from, although in connection with the plumbing and drainage contracting business. The firm intends widening the scope of its business, and will undertake at once the largest contracts, including office buildings, manufacturing plants, hotels, clubs, hospitals, schools and residences of all kinds.

THE METAL MARKET

CURTAILING PIG IRON PRODUCTION.

The continued lowering of prices of pig iron has caused considerable talk regarding blowing out furnaces and it is noticeable that some stacks have gone out which were not badly in need of repair. This, of course, will give stability to the pig iron market if carried to such a point that the supply of iron is less than the demand. A rather more definite turning point, however, can be seen in the inquiry by the U. S. Cast iorn Pipe & Foundry Co., for 50,000 tons of Southern iron to be delivered at its Southern works. It is reported that the company would willingly pay on a basis of $12. for No. 2 Southern foundry for this iron. It is evident that $12. Birmingham is an objective point to buyers and also that the producers are determined to make a stand at that figure. With the curtailing in pig iron production, there is a falling off in the output of coke. As yet, this amounts to little or not more than five per cent. In the north, some purchases of small lots have been made by pipe interests and valve manufacturers. One pipe foundry on the Delaware River buying 18,000 tons of low grade Alabama iron. Southern furnaces claim that because of increased labor costs, there is little or no money in making iron at less than $13. Prices are as follows:

No. 2 Southern foundry Birmingham	$12.50 to $1.300
No. 1 Virginia foundry New York	18.00 to 18.25
No. 2 X Northern foundry	17.50 to 17.75
No. 2 Plain North foundry	17.25 to 17.50
No. 2 Northern foundry Chicago	16.75 to 17.25

WIDE FLUCTUATIONS IN COPPER.

To the copper trade it was more or less a sensation when the Calumet & Hecla Co. cut its price from $13.75 to $13. This company seldom cuts the price and almost never makes any announcement of a cut. It is conceivable that this was done in order to bring about stability to the market and perhaps the new officers of the company are attempting to make a more aggressive campaign.

The decline however, brought business and an advance was made later in the week to $13.25. Electrolytic is quotable at $12.87½ to $13. Business is rather quiet although foreigners have been buying more largely than for several weeks. It is expected that the foreign buyers will fill their requirements at the present low price and this will give stability to the market so when American consumers again find it necessary to buy, the market will be stronger. The copper situation is improving, but very slowly. The exports are meager, amounting to only 6,500 tons during the first half of April.

A NERVOUS TIN MARKET.

Prices of tin have moved within narrow limits and the market has been most unsatisfactory. An advance one day being followed by a decline of approximately the same amount the succeeding day. The position of tin, however, is much firmer than it has been for some time and to many people the price of $35 looks attractive. It is true that stocks are large but at the same time, the arrivals so far this month are only 2,500 tons and this includes two large cargoes from London. So far, there are about 1,100 tons afloat which will make this month's delivery. Should no more tin be engaged to come from London this month, the arrivals will not exceed 3,600 tons and it is probable that the consumption is fully as large as last month when it was 4,000 tons.

LEAD.

The demand for lead is limited and prices are practically without change. The leading interest quoting shipment lead, in 50 ton lots, at $4.50 a 100 lb., while it can be had, for spot delivery, from outside producers at $4.40.

SPELTER.

The spelter market continue exceedingly quiet. Spot being offered at $5.60 New York, and $5.45 St. Louis. It is noted however, that the galvanized works are taking large quantities of spelter.

NEW YORK METAL MARKET, APRIL 20.

Copper, Prime lake	$13.00
Copper, Electrolytic	12.75
Lead	4.45
Spelter	5.70
Antimony, Cookson's	8.35
Straits Tin	32.85

NEW YORK OLD METAL MARKET, APRIL 20.

Dealer's buying prices are as follows:

Heavy Crucible Copper	$12.00 to $12.12½
Plumbers' cocks and faucets	9.00 to 9.25
Heavy brass	8.00 to 8.12½
Light brass	6.25 to 6.37½
Heavy lead	3.75 to 4.00
Tea lead	3.50 to 3.75
Solder joints	6.25 to 6.50

THE OLD IRON MARKET.

The demand for scrap shows some improvement but business is still below normal, and prices are exceptionally easy. No permanent improvement in the scrap market can be expected until the pig iron market finds a bottom.

No. 1 yard wrought long	$14.50 to $15.00
No. 1 yard wrought short	14.00 to 14.50
Machinery cast	14.00 to 14.50
Wrought pipes and tubes	13.50 to 14.00
Wrought turnings	10.50 to 11.00
Cast borings	8.50 to 9.00
Stove plate	11.00 to 11.50

EDWARD J. RICE DEAD.

Edward J. Rice, president of the Edward J. Rice Manufacturing Co., Rochester, N. Y., died at his home in that city on Monday evening, April 11th. Mr. Rice had been engaged in the plumbing business at Rochester for over 30 years, and he is also known as the inventor of several plumbing specialties, in the manufacture of which he was engaged at the time of his demise. He was born in Ireland and came to Rochester when only four years old and received his education in the public schools of that city. After having learned the plumbing trade he engaged in the business on his own account and succeeded in building up a successful business. He is survived by his wife, two sons and four daughters.

The Illinois Beer Pump Co., Chicago, has been incorporated with a capital of $2,500 to conduct a general plumbing business. The incorporators are: G. H. Stellman, E. A. Monast, John F. Clare.

PACIFIC COAST LETTER

With the date for the annual convention of the State Master Plumbers' Association but a little over a month in the future, active work is under way by the officials of that organization in preparing plans for both the business and social ends of the meeting and urgent requests are being sent to all members to be present for the convention promises to be one of the most important ever held in this state. There are a number of matters of great importance that will be acted upon and the discussions at the meeting will be extremely valuable. The trouble that occurred at San Jose last year will be dwelt upon and measures probably passed making a recurrence of this kind of a disturbance more remote. It is anticipated that there will be some mention of what shall be done in the future towards securing the passage of a state plumbing law, but there are those who believe that it will be useless to press this matter in the legislature next year. Both houses of this body apparently favor the measure, but the present governor is strongly opposed to it.

The decision of the Board of Supervisors to allow the temporary structures erected here after the fire to remain for another year, at least, has made its effect felt already and a number of costly improvements on Market street and vicinity have been postponed for that length of time, owners finding it to their advantage to rent the shacks rather than to put up more expensive structures. Building permits and contracts during March were heavier than they were during February, but were not as heavy as were anticipated. The Board of Health has asked for an extra appropriation of $1,000 a month that will be necessary owing to the maintenance of the present wooden structures, and the fire department also asks more on this account. Plumbers were hopeful that the movement to extend the time limit would not meet with success, as the removal of the wooden buildings would have meant a great deal of work for them in the down-town district, while as it is most of the contracts being secured by them are for the smaller class of structures in the outlying districts.

The Pacific Fire Extinguisher Co. has just been awarded the contract for installing the heating and ventilating and power plant in the new Bankers Hotel that is to be erected at Oakland, Cal., across the Bay. This contract is valued at $30,080, and is but one of a number of valuable ones that has been secured by this concern of late. The heating apparatus in the new William Ede Building on Market street, San Francisco, in the vicinity of Seventh, is to be installed by this concern, its bid having been $2,300.

The Turner Co. will shortly commence work on a contract, valued at $5,298, for the plumbing, gas connections and hot-water supply system to be installed in an apartment-house, being erected by J. F. Deninger on Pine street, near Hyde.

Kiernan & O'Brien have been awarded the contract for installing the plumbing work in a building being erected on Minna street, near Second, by N. Clark & Sons, the brick dealers. The consideration is $895.

J. L. Brown & Son have been awarded the contract for installing the plumbing, gas-fitting and sewering for a 3-story apartment house to be erected by the G. W. Hume Co., at Fulton and Octavia streets. The consideration is $2,145.

D. Campbell has just secured a very nice residence-plumbing job, the work to be done in the home being erected by Sewall Dolliver on Washington street, near Spruce. The contract is valued at $1,200.

The R. Chapman Plumbing Co. has been awarded the contract for installing the plumbing work in a 3-story apartment house, being erected on Pine street, near Leavenworth. The heating system will be installed by the Turner company.

The office of chief sanitary inspector of San Francisco has been abolished and the salary of Health Officer McNutt has been advanced slightly, as he must now do much of the work formerly done by the chief inspector.

The Mission Clothiers who are erecting a building on Dolores street, near Nineteenth, have contracted with the Morris Stulstaf Co. to have the plumbing work installed for $1,173.50.

The Vacuum Oil Burner Co. has been incorporated in San Francisco, with a capital stock of $10,000, by C. K. Harper, F. A. Tibbitts, G. S. McEvers, C. M. Cook and D. G. Putt.

If Erling Rohde, of the firm of Rohde Bros., San Diego, Cal., attends the master plumbers' convention next month in Yosemite Valley, he will be accompanied by his bride for he is now a benedict. He was married a short time ago to Miss Esther White, formerly bookkeeper for the firm.

J. S. Lange, Los Angeles, has been awarded the contract for installing 52 lavatories in the Hotel Clarendon at that place. The contract amounts to $1,500. Standard basins are to be used with Jenkins' cut-offs and Perry's faucets.

The plumbing work in the Concordia Club building at Los Angeles is to be done by J. W. Hellmann for $1,200.

H. J. Crawford, Los Angeles, has submitted the lowest bid for the installation of the plumbing and heating apparatus in the gymnasium of the Los Angeles High School, and will probably be awarded the contract.

A proposition is on foot to establish a public-comfort station at San Diego, Cal., in the City Plaza.

The International Tool Co. is preparing to erect a factory at Bakersfield and will commence the manufacture of a pipe-wrench.

An application has been filed with the City Council at Seattle for a permit to establish a district steam-heating plant at that place and to lay the necessary pipes.

ARCHIE HEIGHT & BRO'S. FIRST ANNUAL DINNER.

The plumbing firm of Archie Height & Bro., Post-office Bldg., Allenhurst, N. J., recently completed its third year in business and celebrated the event in a most

First Annual Dinner of Archie Height & Bro., Allenhurst, N. J.

pleasant and appropriate manner by tendering its employees a banquet at one of the local hotels. The enjoyable event made such a hit with the 17 men in attendance, that the members of the firm, Archie Height and Harry Height, are planning to make it an annual affair.

IN EARLY DAYS.

By H. S. R.*

(With Apologies to H. S. R.)

The quaint and interesting illustrations accompanying this poem are taken from "Dagligt Liv i Norden i det Sekstende Aarhundrede" (Daily Life in Northern Europe in the 16th Century) by Troels-Lund, a valuable historical work in 14 volumes, containing about 2,000 illustrations, reproduced from original drawings between 300 and 400 years old, most of which are now in the Royal Library at Copenhagen, Denmark.

In Early Days! that's long ago,
In 1586 or so,
Things were not as they are now
And plumbers different men, I trow.

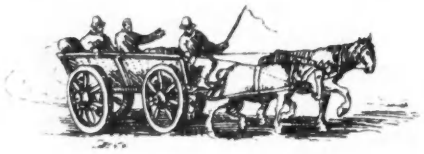


Fig. 1.

Domestic engineering's scope
Was limited and had short rope.
The pictures shown, as published then,
Incite the motion of my pen.
Fore'er the same, the moving day
Was then as now. Please note the dray.
They moved the household goods and gods
And buried safe their treasure-wads.
Tired to death, their bed they'd woo,
And climb up to it (Fig. 2).
In Fig. 3 the chandelier
In early form you see appear.
Though heavy quite it seems to be,
They called it "light" in minstrelsy.
The festive board in Fig. 4
Oft' groaned 'neath meats and drinks galore.

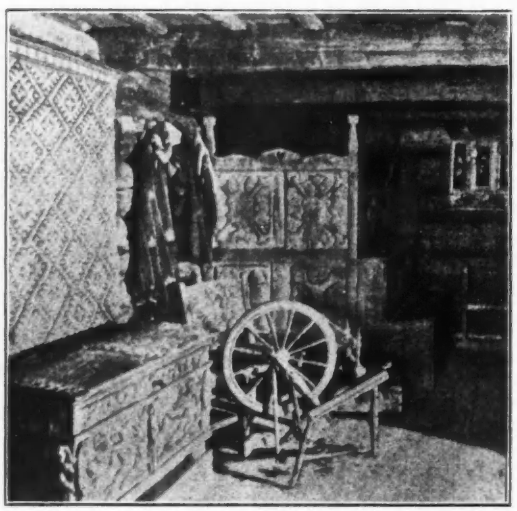


Fig. 2.

In those days women were the same,
For mice in their Eternal Game
With cats, have routed ladies fair.

*By His Serene Recorder.

The proof—you see they are not there.
The Fig. 5—a household bath
Displays the sanitary path

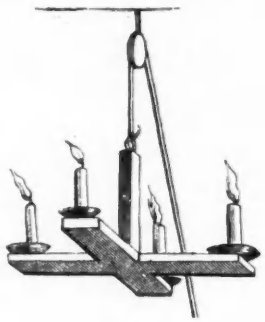


Fig. 3.

Our predecessors thought was good.
The plumbers then made baths of wood,
Sometimes lined with lead. Kindly heed

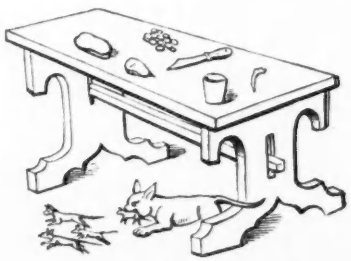


Fig. 4.

How deftly father takes the "bleed"
From mamma's back with bleeding cup.

Fig. 5.

A public bath is well shown up
In Fig. 6. The water hot
Is made by heating stones on spot
And dropping them into the trough.
The pipe above's for cooling off.

On the left's a bathing party,
On the right, a drinker hearty.

Fig. 6.

Different then the plumber boys
Who catered to these bathing joys.

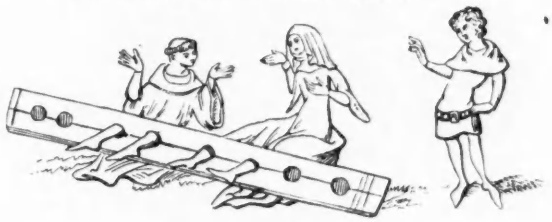


Fig. 7.

Different too, and stranger still,
The things they did, if with the bill,
The purchasers did not agree,
Or doubted work's efficiency.
Fig. 7 then shows the fate,
That figurer poor did await—
A day or two spent in the stocks.
Sterner and more vigorous shocks
Were given on the rack and wheel.

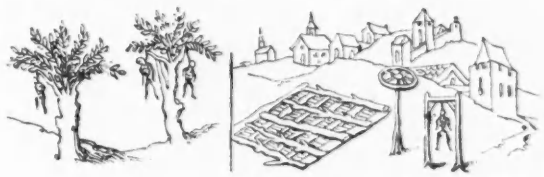


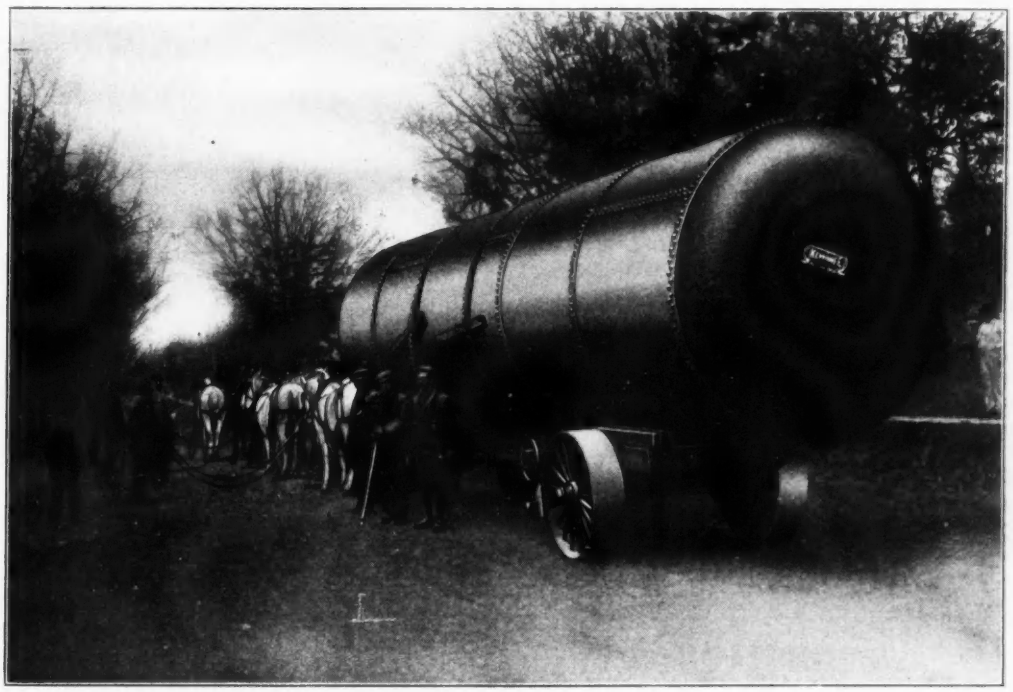
Fig. 8.

In Fig. 8 a glance we steal
At these, and also plainly see
The end of all controversy.
"Suspended" judgment was the term
By which they classed the victim's squirm.
Things now we call by other name
But get it in the "neck" the same.

HOW LARGE KEWANEE PNEUMATIC TANKS ARE TRANSPORTED.

That the trade of supplying pneumatic tanks for water-supply systems for isolated dwellings, institutions and even small towns has became quite a noteworthy industry is evidenced by the accompanying illustration, showing a Kewanee pneumatic tank, 8 ft. in diameter and 32 ft. in length, which was recently installed at Hartland, Wis.

The installation of pneumatic tanks of standard sizes, from 2 ft. x 6 ft. up to 4 ft. x 24 ft., does not offer a serious problem, as these standard sizes can easily be handled by contractors, without special equipment. But larger tanks require special handling equipment—particularly in hauling from the freight station to the point of installation. So the Kewanee firm has had special trucks made for this hauling. They use two of these trucks, one in the eastern and another in the western territory. These trucks can readily be taken apart so that they do not require special cars; and then they can be assembled quickly on the ground.



Large Kewanee Pneumatic Tank on Special Steel Wagon Dra wn by Six Horses.

The largest Kewanee Tank is 9 ft. in diameter and 40 ft. in length. As it weighs nearly 20,000 pounds, it can be seen that a wagon of special construction was necessary to handle it. These steel tanks are manufactured by The Kewanee Water Supply Co., Kewanee, Ill.

A REFRIGERATOR WASTE TRAP.

There are four kinds of traps with which plumbers and users of plumbing supplies come into general contact—plain traps, sealed traps, unsealed traps and concealed traps. Many refrigerators are supplied with concealed traps, and therein lies the difficulty from the sanitary point of view.

People who think that the duty of a refrigerator trap consists merely of taking away the water dripping from the refrigerator ice are much mistaken. The problem

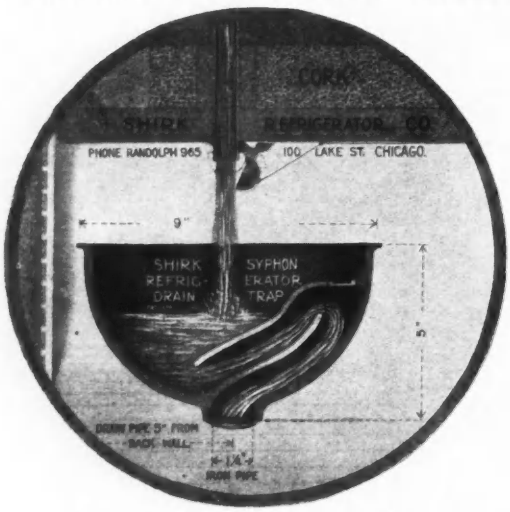


Fig. 1. The Shirk Refrigerator Trap.

would be a simple one if that were so. Investigation, however, shows that the ice and water absorb some of the constituents of the articles they keep cool. In case of a large butter refrigerator, for instance, the trap will be found after a certain period of use to be lined with grease. Similar conditions prevail with all other articles of food.

The next point to be considered is that this being the

Fig. 2. Refrigerator with Shirk Refrigerator Trap and Hot-Water Connection.

case, the impurities, carried away by the water, of this character, adhere to the trap and its discharge openings, and in the course of time, the openings are blocked.

Next let it be noted that refrigerator-traps are placed underneath the refrigerators in such a position that examination of them involves more labor than the average individual is willing to undertake. Consequently the traps go unwatched, clog up and an overflow takes place with disastrous results to ceilings and expensive furniture below.

Furthermore, supposing that the trap is still operative and that the quantity of accumulated filth around its outlet is not sufficient to prevent the discharge of water, at the same time the dirt so gathered is a disease-creator, and were it visible would not be tolerated for an instant by the sanitary-minded housewife.

The refrigerator-trap (Fig. 1) we show here in connection with a refrigerator is especially designed to keep itself clean under all conditions of use. It requires no painful operation of laying flat on the floor and craning one's neck to ascertain whether it is in good condition.

As you will note in Fig. 2, a hot-water connection is taken from above the sink and run behind the refrigerator. The valve delivers hot water into the drainage-pipe, which passes through the refrigerator, discharging into the siphon refrigerator drain-trap. This hot water removes instantly all impurities and these are siphoned away in the natural way. A pint of water will siphon the trap and from 2 to 2½ in. of seal is maintained at all times. The manufacturer of the trap is the Shirk Refrigerator Co., 100 Lake St., Chicago.

This company has had great success since the trap has been placed on the market, and has completely equipped a number of large apartment buildings with these flushing traps during the last few months. In the Hyde Park

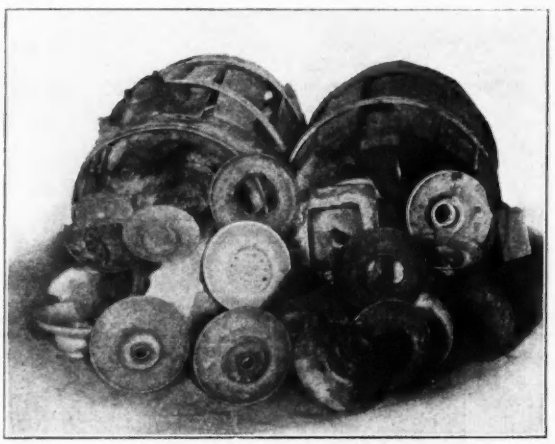


Fig. 3. Traps Removed from One Building and Replaced with Shirk Refrigerator Traps.

apartment building, Jefferson Ave., Chicago, for instance, 55 of these traps were put in position. Plumbers desiring further information concerning the Shirk trap can obtain it by application of the company.

Fig. 3 shows a photograph of traps taken out of the Hyde Park building and replaced by the Shirk trap. Few of these traps were free from accumulations of grease and dirt, some of them being entirely out of commission. It was to overcome the evil results from non-siphon traps that Mr. Shirk designed his present apparatus. A hot-water flushing valve is placed at hand-height on the refrigerator so that stooping is unnecessary.

The trap can also be used with satisfaction where the hot-water communication is not made to the refrigerator. It is sufficient to pour a tea-kettleful of boiling water down the drain-pipe in the ice chamber once a week before refilling the refrigerator with ice.

WANT HIGHER WAGES.

The journeyman plumbers at Watertown, N. Y. are trying to secure a raise of wages. The present scale calls for 37½ cents an hour, and they are asking for 45 cents an hour.

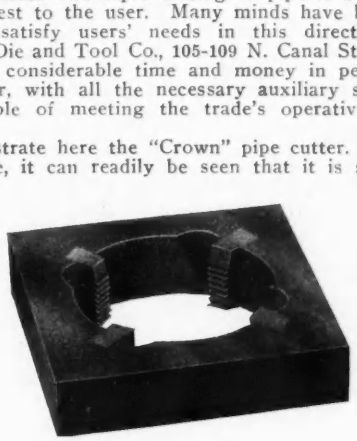
Journeyman plumbers at Aurora, Ill., are asking for an increase in wages from $4.00 a day to $4.50 a day.

Joseph Polak is planning to open a plumbing establishment in Aurora, Minn.

THE "CROWN" PIPE CUTTER AND DIES.

The accurate and rapid cutting of pipe is a matter of vital interest to the user. Many minds have been exercised to satisfy users' needs in this direction. The "Crown" Die and Tool Co., 105-109 N. Canal St., Chicago, has spent considerable time and money in perfecting a pipe cutter, with all the necessary auxiliary stocks and dies capable of meeting the trade's operative requirements.

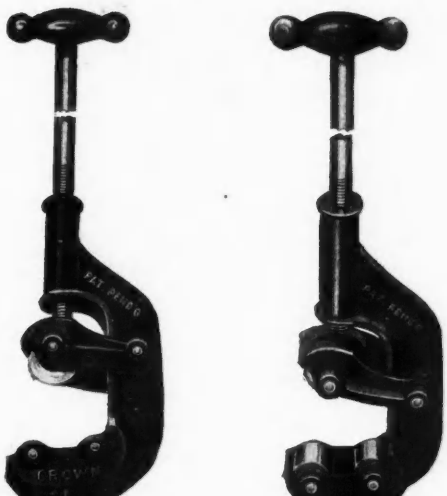
We illustrate here the "Crown" pipe cutter. From its appearance, it can readily be seen that it is substantial



The "Crown" Die.

and rigid during operation. The cutter wheels are made of the best tool steel, differing in construction from the general type of cutters, and for which it is claimed that only half the labor is necessary and that in action it does not split open the weld in the pipe. The high grade of steel used insures its lasting qualities.

It will be noted that in the bottom of the cutter frame



The "Crown" Pipe Cutter.

there is tapped a hole. This is a convenient factor in operation in the middle of a pipe length. The workman can screw a half-inch pipe in the hole and thus obtain an extra handle, obviating the necessity of reaching round the pipe each time.

The rollers in the cutter are larger and heavier than those in the regular tools of the description, and the cutters have a wider bearing. All the pins that hold the cutters and the rollers are also of tool steel.

In the die shown, it will be noticed that it has a cast-iron body, with inserted steel teeth or chasers, these also being manufactured of a special grade of steel. The chasers are so amalgamated to the cast-iron body of die that it is impossible for them to slip or come loose. This is of vital importance as a slip of one chaser would strip the thread from the pipe and so render the die useless, as it would do imperfect work.

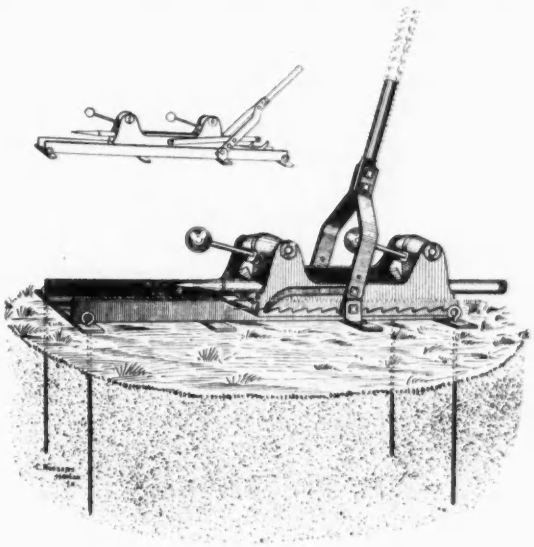
The ease with which the thread-cutter does its work can be gaged when it is noted that one man can operate a 2-in. die without assistance. The accuracy of the threading and the cleanness of the cut is demonstrated by the working back of the tool with one finger.

The "Crown" Die and Tool Co., has installed an up-to-date plant at N. Canal St., and has for its active officials men who have studied the needs of pipe-users for many years. The president of the company is W. R. Tucker; vice-president and superintendent, E. E. Beck; secretary and manager, F. P. Gillett; treasurer, Roger Sherman. Further information concerning this equipment can be obtained upon request.

"THE PIPE-PUSHER."

Among the thousands of practical inventions patented since the founding of our Republic, there are a few, forming a class by themselves, which loom up distinctly on account of their labor-saving qualities. Among the inventions of this class are the cotton-gin, the self-binder, the sewing-machine and—as the manufacturer thinks—the "Pipe-Pusher."

The "Pipe-Pusher" is a recent invention, the application for letters patent being still in the hands of the



The "Giant Pipe-Pusher.

authorities at Washington, but the manufacturer predicts that this device will prove itself elegible to a place among the foremost of the few great labor-saving apparatus of this century.

"The Giant Pipe-Pusher," which is its complete name, is a powerful but compact machine operated by working a lever back and forth and is used to force water-pipe and gas-pipe through the ground to save trench digging. The accompaning illustration shows the machine staked to the ground ready for service. Assuming that a bank stands in front of the machine, the working of the handle would force the pipe through the bank. Wooden stakes may be driven back of the steel cross-bars to prevent the machine from yielding backwards while doing heavy driving.

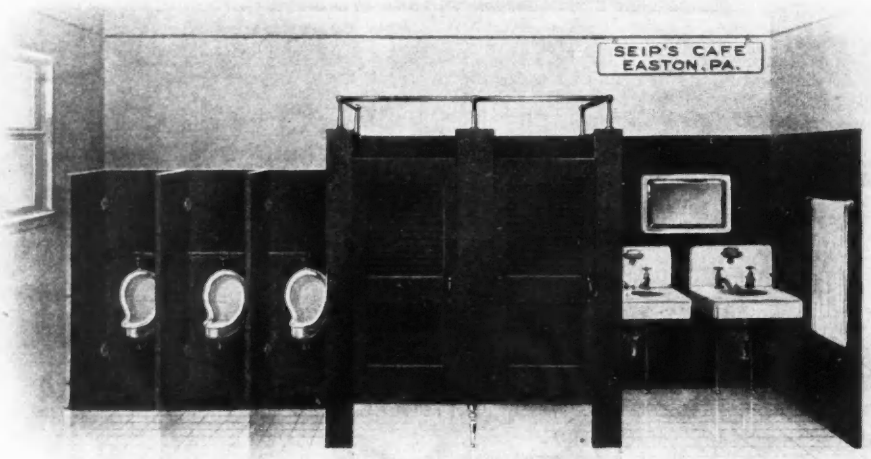
The chief advantages of this labor-saving device is that it enables one man to do the work of 10 to 20 men, and that it can also do work where it would be impossible or very inconvenient to dig trenches at all as, for instance, beneath a crust of frozen ground, under buildings, beneath ponds, through quicksand, etc.

The Baker & Martin Mfg. Co., 1030 Court St., Harlan, Ia., the manufacturers of this machine, report that they are literally flooded with orders although they have, as yet, done almost no advertising. The machines seem to be a perfect success in every way and those using them are writing testimonials that are flattering in the extreme. Some of them claim that the new machine more than paid for itself the first day or two it was in operation, and

others claim an increase of 100 per cent. in their business. Large contractors are beginning to negotiate for consignments of from 10 to 50 machines to be distributed among their branch houses and the firm at Harlan is doubling the size of its factory.

A PLUMBER'S SIDE LINE OF SLATE.

Sanitary slate as a side line is offered to the plumber by the Penn'a Structural Slate Co., Dome Bldg., Easton, Pa. An effective illustration of how sanitary slate may be advantageously used, is shown by the photograph herewith reproduced of an attractive installment in Seip's Cafe, Easton, Pa. The equipment of a business store with a commodious and sanitary toilet-room accommodation is not generally thought of as a method of increasing business. It can readily be seen, however, that if such installation only brought to the store three customers a day with an average profit of 5c each, it would yield to the store a net profit of $50.00 a year. Such estimate,, of course, is far too low, but is used as an example. Those who have installed accommodations of this character and have advertised this new and sanitary adjunct to their store have noticed an immediate increase of their business.



How Sanitary Slate is Used to Advantage at Easton, Pa.

The up-to-date plumber eager to avail himself of every opportunity of giving a customer a satisfactory installation, and at the same time strengthening his hold on the business of his community, will lose no opportunity to take hold of work of this character. Sanitary slate can also be used to advantage in washtubs and kitchen sinks. The Penn'a Structural Slate Co. makes these sanitary slate washtubs with any number of compartments from one to six. Sink-slabs and sink-backs are also growing in popularity and tend to make the kitchen more sanitary. As an evidence of the recognition of slate as a desirable feature of sanitary plumbing, the United States Government has specified, in a number of instances, slate slabs for urinals, shower-stalls, closet-stalls, bathroom partitions, lavatory equipments, etc.

The Penn'a Structural Slate Co. issues a large quantity of interesting literature concerning these slate products and their many adaptations which can be secured upon request.

Robert T. Shaw, 113 N. Vermillion St., Streator, Ill., has been awarded the contract for the plumbing and heating in T. F. Thompson's new residence in that city.

Davis & Walker, Auburn, Neb., have secured the contract for the plumbing in the new residence being erected for Will Davis, near Julian.

NEWS FROM MAINE AND RHODE ISLAND.

The lowest bidders for the plumbing and heating of the new buildings which are to be added the reservation at Fort Williams, Portland, Me., received recently, were as follows: Guard-house: Plumbing, A. L. Dow, Portland, $1,595.94; heating, M. C. Hutchinson, Portland, $1,284. Bakery: Plumbing, Myers & Mahoney, $458; heating, Chisholm Heating & Plumbing Co., Lowell, Mass., $374. Officers' quarters: Plumbing, George Dillon, Inc., New York—$1,231 for one building, $1,230 for second building; heating, Chisholm Heating & Plumbing Co., Lowell, Mass., $1,147 each. Administration building: Plumbing, Warner & Rittenhouse, Washington, D. C., $822; heating, Warner & Rittenhouse, $1,084.60. Officers' quarters (plan 260, one building): Plumbing, George Dillon, Inc., New York, $1,160; heating, Arthur H. Moulton, Portland, $1,060. Officers' quarters (plan 236—two buildings): Plumbing, George Dillon, Inc., New York, No. 1, $725; No. 2, $724; heating, M. C. Hutchinson, Portland, $658 each.

Steward & Blunt have taken over the stock and trade of the Steward Hardware & Plumbing Co., Skowhegan, Me. The individuals composing the new firm are Benjamin T. Steward, who is well known in the plumbing and steamfitting business throughout Maine, and Wallace J. Blunt, who for nine years was connected with the Blunt Hardware Co.

The Rhode Island Legislature has appropriated $7500 for a new heating plant in the state school for the deaf.

Inspector of Plumbing Reuben S. Bemis, Providence, R. I., has appointed Harry W. Seaborne as the new assistant-inspector in his department recently authorized by the city government. The new assistant-inspector has for the past five years been employed by the Tierney-Colgan Co., and resides on Algonquin street Providence.

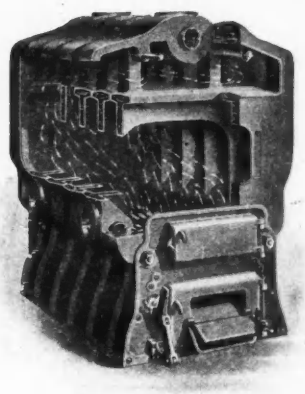
The town of East Providence, R. I., has been authorized by the state legislature to appoint an inspector of plumbing and drainage and to make ordinances regulating the plumbing and drainage of buildings within the town. The appointment of the inspector will be made shortly.

MONUMENT POTTERY TO BUILD LARGE ADDITION.

The Monument Pottery Co., Trenton, N. J., has awarded the contract for the erection of a four-story brick and stone building. The new building will be used for the manufacture of sanitary ware; it will be entirely fireproof and cost about $30,000.

The B. t. u.

"It's not sich a long story," as the elder Mr. Weller said, "but she's to the p'int." "A B. t. u." (British thermal unit) is, roughly speaking, the amount of heat required to raise one pound of water one degree Fahrenheit. Nothing very elaborate, but its present use in connection with IDEAL Boilers means a strong evolution in the direction of certainty in laying out Steam and Hot Water heating outfits.



IDEAL SECTIONAL WATER BOILER
Note the water ways, the large fuel pot and gas chamber—strong factors for full heating results.

Old-fashioned "guess" and "maybe" methods have served their limited purpose and are put aside. In the making of IDEAL Boilers their heat-making powers and rated capacity under normal conditions are all based on the facts regarding the never failing little B. t. u. It means more confidence in adjusting the plant and better results in practice.

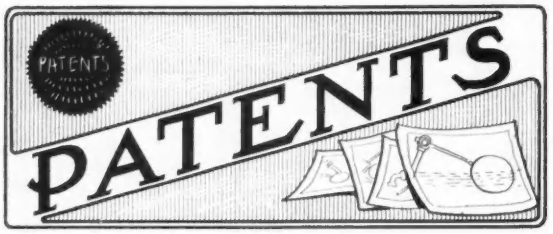
AMERICAN RADIATORS & IDEAL BOILERS

A Heating Outfit is More Efficient with NORWALL and SYLPHON SPECIALTIES

AMERICAN RADIATOR COMPANY

General Offices, 282-286 Michigan Ave., Chicago.

New York	Cincinnati	Cleveland	Atlanta	Bradford, Ont.	Denver
Philadelphia	Boston	Milwaukee	Minneapolis	Seattle	St. Louis
Pittsburg	Buffalo	Indianapolis	Kansas City	Omaha	San Francisco
Washington					



953,040. Pressure-Regulator. Heinrich Kruger, Berlin, Germany.

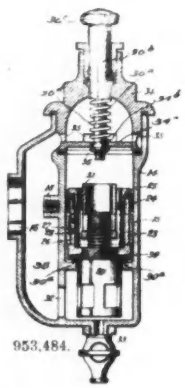
953,057. Adjustable Die-Stock. John B. Phillips, Warren, O., assignor to The Borden Co., Warren, O., a corporation of Ohio.

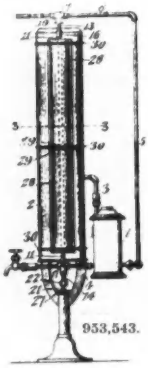
953,067. Stop-cock. George T. Stark, Louisville, Ky.

953,079. Air-Valve for Radiators. John T. Whiting, Syracuse, N. Y., assignor on one-half to Allen B. Pierce, Syracuse, N. Y.

953,100. Valve. William Nelson and Charles O. Churchill, Binghamton, N. Y., assignors to The Georgian Manufacturing Co., Binghamton, N. Y., a corporation of New Jersey.

953,154. Waste-Valve for Washbowls. William H. Pride, Jr., Staples Minn.


953,484.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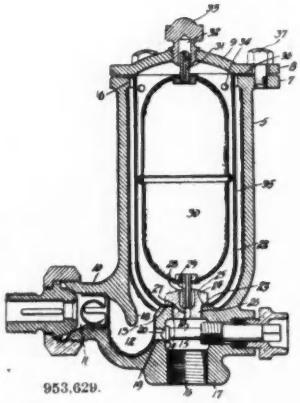
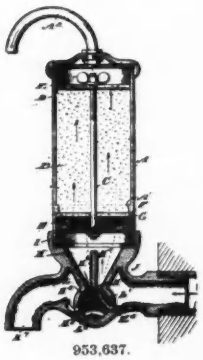
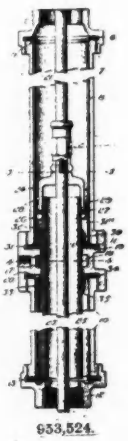

953,629.


953,637.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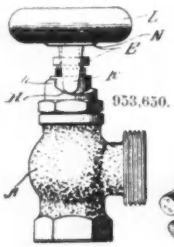
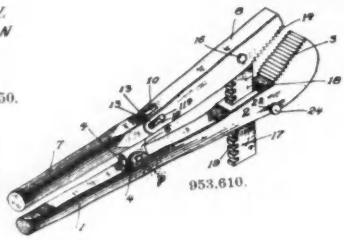

953,650.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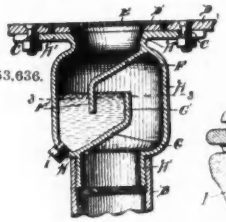
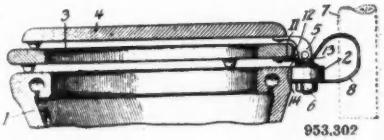

953,636.


953,302

963,186. Faucet. John L. Thurston, deceased, late of Boston, Mass.; Edwin Langdon Thurston administrator of said John L. Thurston, deceased.

953,200. Water-Meter. Ernest E. Gamon, Newark, N. J.

953,235. Float-Valve. William T. Rymer, Walnut Springs, Tex.

953,260. Automatic Valve. William E. Dixon, Chicago, Ill.

953,302. Water-Closet Attachment. John W. Spalding, Aurora, Ill. Among the claims made for this invention are the following: "The combination of a structure having a hinged member, a bowed leaf spring having one end secured to said structure adjacent to the hinges and having a free end extending into position to engage the hinged edge of said member, said free end being arranged to bear upon said member at one side of the axis of the hinges and being adapted to hold said member in an open position, said spring being of such strength and form as to yield to permit said member to assume a substantially closed position by gravity when turned to a certain distance from its open position, a shoulder formed on said spring and adapted to engage said member for securing it against accidental dislodgment from its open position, and a wear-plate secured to said member and having a shoulder adapted to coact with the shoulder on said spring."

953,461. Radiator Attachment. James R. Entwistle, Framingham, Mass."

953,484. Water-Closet. Charles H. Moore, New York, N. Y., assignor to The J. L. Mott Iron Works, New York, N. Y., a corporation of New York. The claims made for this invention are in part as follows: "The combination with a bowl or the like of a valve chamber or pocket formed integral therewith having openings at both ends and provided with a port communicating with the flushing channel of the bowl, a valve casing adapted to be inserted within said chamber and having a port leading from the interior of the valve to supply water to the bowl, a cylindrical chamber in said casing, a valve seat therein, a piston head provided with a hollow piston head open at the top, said piston head being adapted to rest on the valve seat and to fit closely with the inner surface of the piston chamber adjacent to the top of the head, means for admitting fluid to a point below the piston head and means for admitting fluid to a point above the piston head to flush the bowl and to regulate the duration of the flushing period, said last-mentioned means comprising a passage formed in the side of the piston head leading to the interior thereof above the bottom and a valve member adapted to be adjusted to regulate the supply of fluid passing through said passage."

953,505. Water-Meter Connection. George B. Bassett, Buffalo, N. Y.

953,650. Combined Air and Water Pump. Jesse B. Garber, Salem, O., assignor to The Deming Co., Salem, O., a corporation of Ohio. Among the claims made for this pump are the following: "In a hydropneumatic pump the combination with water lifting mechanism, of an air pumping cylinder, a reciprocating plunger in said cylinder, a tubular plunger extension forming a water conduit, an annular compression chamber between the walls of said cylinder and tubular extension, a check valve guarding an inlet to said chamber comprising a valvular packing gland adapted to permit the passage of air into said chamber and a flexible plunger packing also of valvular construction adapted to permit the escape of air from said compression chamber during each downstroke."

953,543. Automatic Regulator for Water-Heaters. Edward P. Nole, North Belle Vernon, Pa. This invention is described in part as follows: "In a device of the class described, the combination with a supply pipe having a valve seat, of a tube connected at its upper end with the supply pipe and extending downwardly therefrom, a valve co-operating with the valve seat and having an elongated

stem depending into the upper portion of the tube and provided in its lower end with a threaded socket, a tubular expansible member located within the said tube and having a lower end wall and interiorly threaded at its upper end, a connecting screw extending into the socket of the valve stem and into the threaded upper end of the expansible member, and an adjusting screw operating through the lower end of the tube and engaging the lower end wall of the expansible member and supporting the latter."

953,610. Pipe-Wrench. Abner M. Hall, Williamsport, Pa. Among the claims made for this invention are the following: "A wrench comprising a stationary jaw provided with a handle, a movable handle having a pivotal connection therewith and provided with a pivot ear at its forward end, a movable jaw having a bifurcated end the members of which are slotted, a pivot pin for holding the bifurcated end of said movable jaw in pivotal engagement with the movable handle, and an adjusting bar carried by said movable jaw and adapted to be locked in rigid engagement with the stationary jaw."

953,629. Air and Water Discharge Valve for Radiators. Fred W. Leuthesser, Chicago, Ill. This device is described in part as follows: "In a valve of the class described, the combination of a casing provided with an inlet passage and a discharge passage, a float within the casing, for governing the discharge passage, an inner shell surrounding the float provided with a water inlet hole midway of its length and below the line of flotation of the float, and with an air inlet opening adjacent to its upper end, and having an imperforate body below the water inlet opening and between the water inlet opening and the air inlet opening and secured to the bottom of the casing, and provided at its upper end with an outwardly extending flange, a cap or cover for closing the open upper end of the casing and shell and adapted to clamp and secure the flange on the inner shell, and means for discharging the air, substantially as described."

953,636. Trap. Albert W. Myers, Granite City, Ill. The entire claim made for this invention follows herewith: "As a new article of manufacture, a trap comprising a body provided with a flanged upper neck having oppositely disposed bifurcated arms for attaching it to the under side of a sink, said body being provided with a threaded lower neck for connecting it to a drain pipe, inclined partitions extending inwardly from opposite sides of the body provided with angled vertical parallel ends, said partitions extending inwardly beyond the center of the body and the ends out of a horizontal alinement forming a trap proper, said body having a threaded bore slightly above the lower partition and a plug working in the bore whereby said trap can be quickly cleaned."

953,637. Valve or Faucet. Edwin P. McCollom, Baltimore, Md. The most notable claim made for this invention reads as follows: "A faucet for use in connection with filters connected therewith, and having an intermediate chamber, a plug seat below the same and having inlet and outlet ports communicating with said chamber, and a partition between the said ports, the plug seat being also provided with supply and discharge ports opposite each other and equidistant respectively from the inlet and outlet ports of the intermediate chamber, a plug having passages formed through it and arranged at one end a distance apart equal to the distance apart of the inlet and outlet ports of the intermediate chamber, the passages flaring from said ends and opening at their other ends a distance apart equal to the distance between the supply and discharge ports whereby the plug may be adjusted to establish communication between the supply and inlet ports, and the outlet and discharge ports, substantially as set forth."

953,650. Valve. John D. Walsh, Lockport, N. Y., assignor to American District Steam Co., Lockport, N. Y. The claims made for this device are in part as follows: "In a valve, the combination with a valve-body and valve-seat, and a lifting valve and valve-stem rotatable within the body, of a spiral cam-way disposed around the valve-stem stationary with the valve-body, a centrally apertured hand-wheel set upon the upper end of the valve stem, a washer member upon the lower surface of said hand wheel and having a depending finger to co-operate with the cam-way and being further provided with up-standing lugs received within the hand wheel to the side of the central aperture thereof, a washer overlying the hand wheel covering the apertures within which said lugs are received, and a screw passing centrally through said washer and taking into the end of the valve stem."

CAPITOL BOILERS AND RADIATORS

REAL TEST No. 5.

(Showing the real value of Divided Sections.)

During the winter of 1907 the return on 726 Capitol Boiler in M.....'s greenhouse stopped up with mud and shut off the water supply. Naturally the back sections became overheated and cracked. We took out the broken sections and plugged the openings in the header and cored base with wooden plugs and replaced the sections to complete the firebox.

She used the boiler this way until we got new sections from the factory. It was very cold at the time this accident happened and had it not been for the quick repair feature on your boiler she would have lost several hundred dollars worth of plants.

(Name and Address on request.)

United States Heater Company.

General Offices and Works: Fort St. and Campbell Ave., DETROIT, MICH.

BRANCHES:			SALES AGENCIES:		
DETROIT	-	139 Jefferson Ave.	MINNEAPOLIS, MINN.,	-	Plumbing & S. F. Supplies Co.
NEW YORK	-	129 Worth St.	ST. LOUIS, MO.,	-	L. M. Rumsey Mfg. Co.
CHICAGO	-	34 Dearborn St.	DENVER, COLO.,	-	Kellogg & Stokes Stove Co.
OMAHA	-	916 Farnam St.	DULUTH, MINN.,	-	Duluth Plumbing Supplies Co.

Classified Advertisements

Advertisements under this heading 4 cents per word per issue, address included. Remittance to be made with order. To insure insertion copy should be received not later than Wednesday morning

Situations Wanted

WANTED—EXPERIENCED MAN DESIRES Washington, Oregon and California territory. Plumbing or heating specialties; no commission basis. Address No. 274, Domestic Engineering, Chicago.

WANTED—POSITION AS SALESMAN for pipe, fittings and brass goods. Experienced and thoroughly posted. Address 273, "Domestic Engineering," Chicago.

WANTED—POSITION AS BUYER AND Sales Manager or Branch Manager in wholesale plumbing and heating supply line, by man now employed in similar position on the Pacific Coast. Prefer eastern city. Address No. 261, "Domestic Engineering," 325 Dearborn St., Chicago.

TRAVELING SALESMAN FOR HEATing and Power Plant Supplies is open for an engagement. Has had 15 years' experience. Knows the trade well—from Buffalo to Denver. Address 231, "Domestic Engineering," 325 Dearborn St., Chicago.

RADIATOR SALESMAN WITH AN EXtensive acquaintance in New York and vicinity would like to make a change this spring. A No. 1 references. Address 265, "Domestic Engineering," 325 Dearborn St., Chicago.

WANTED—A POSITION AS SOLICITOR and estimator with a heating contractor; 15 years' experience on heating work; or would take position as salesman for heating or plumbing goods; experience and extensive acquaintance with the trade in the East. Address No. 266, "Domestic Engineering," 325 Dearborn St., Chicago.

TRAVELING SALESMAN, WHO HAS covered the Pacific Coast for a manufacturer of plumbers' brass goods for several years, would like to make a change May 1. Has a large acquaintance. Address 268, "Domestic Engineering," 325 Dearborn St., Chicago.

SITUATION WANTED—STEADY EMployment by first-class steamfitter. Can design and estimate. No boozer. Best of references. Address, stating wages, No. 267, "Domestic Engineering," 325 Dearborn St., Chicago.

WANTED—POSITION WANTED BY good reliable plumber; can estimate plumbing and heating; has experience in mechanical drawing and laying out of work; sober, industrious; can make good anywhere. Address No. 306, "Domestic Engineering," Chicago.

WANTED—POSITION AS BOOKKEEPER with a large plumbing establishment. Understand plumbing business thoroughly. First-class references. Middle West preferred. Address No. 276, "Domestic Engineering," Chicago.

Help Wanted.

WANTED—Salesmen to sell our "Acme Water Heaters" as a side line. Heaters are fast sellers and good repeaters. Write for territory. Acme Mfg. Co., Toledo, O.

WANTED—EXPERIENCED TRAVELING salesman, fully acquainted with plumbing and heating line, can secure good position. Address, giving full particulars regarding past experience, No. 278, "Domestic Engineering," Chicago.

WANTED—BY A PROMINENT MANUfacturer of Plumbing Fixtures, a representative for New Mexico and Arizona, who is familiar with the trade; preferably as a side line and on commission basis. Address No. 269, "Domestic Engineering," 325 Dearborn St., Chicago.

WANTED—TWO CAST-IRON BOILER salesmen, one for the Pacific coast and one for the middle west. Only those thoroughly acquainted with the trade need apply. Address No. 302, "Domestic Engineering," Chicago.

WANTED—A FIRST-CLASS FOREMAN for old-established Plumbing and Heating business. Must be thoroughly capable, reliable, a hustler, and able to accurately estimate work. A splendid opportunity for right party. Address No. 300, "Domestic Engineering," 325 Dearborn St., Chicago.

WANTED—A FIRST CLASS STEAM fitter, one who can do a fair job of plumbing, must be capable of estimating from plans, sober and reliable. Will give steady job and good wages; references required. City of 90,000. Address No. 275, "Domestic Engineering," Chicago.

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